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MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 67
No. 24

ESTABLISHED 1882

\$4.00 a year
Single Copy 10 cents

The Proper Warehousing of Cotton.

Sidelights Upon the American
Fertilizer Industry.

Vast Project at Baltimore for
Petroleum Refining.

BALTIMORE, JUNE 17, 1915



First Aids to the Boiler Room

CLINCHFIELD FUEL COMPANY

SPARTANBURG, SOUTH CAROLINA

Cut out belt and pulley troubles of the Friction Feed by using a Soule Steam Feed in your Saw Mill.

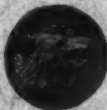
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TRANSMIT YOUR POWER

by machinery that you know can be depended upon at all times and under all conditions. Our business is building power transmission machinery of excellent character.

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High Grade Firebrick and Fireclay Products.
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Capacity 20,000,000 Per Year

Union Mining Co.

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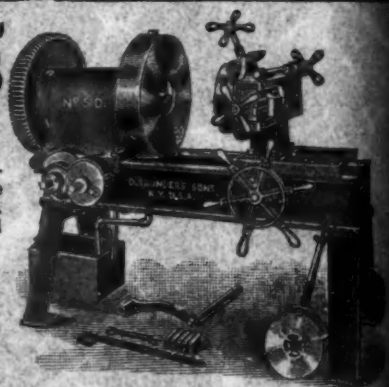
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Oil Burners, Storage Bins and Systems, Elevators, Conveyors, Car Pullers, Etc.

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The Truth About Leather

In a recent defensive circular to the auto trade, leather manufacturers define leather as "the skin or hide of an animal, or any part of such skin or hide, tanned or otherwise prepared for use."

But since whole hides are too thick for upholstery and the under fleshy portion must be split away from the grain side to make it thin enough, why should the two or three sheets into which the wastage is split be called leather? Although artificially coated and embossed to look like real grain leather, they are weak, spongy, and soon crack, peel and rot.



is an improved leather substitute, guaranteed superior to coated splits. Its base is cotton fabric, twice as strong as the fleshy split. It is coated much heavier and embossed in the same way.

America's largest auto makers adopted it for upholstery because it outwears coated splits. A leading furniture maker says: "The cheap split leathers should be entirely eliminated in furniture upholstery."

Two-thirds of all "leather upholstery" is coated splits. Demand superior Fabrikoid on your car, buggy or furniture, and Fabrikoid Raynite tops, guaranteed one year against leaking.

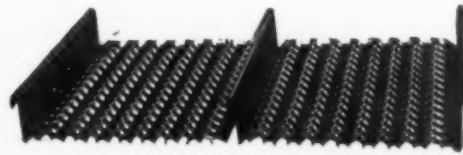
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DU PONT FABRIKOID COMPANY, Wilmington, Delaware

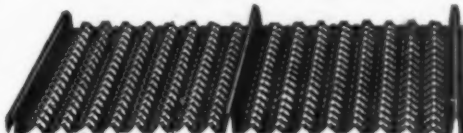
Canadian Branch: Toronto, Ontario



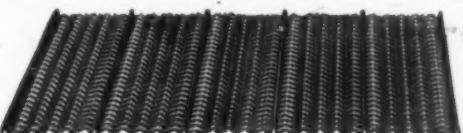
1 1/2" Hy-Rib—Very rigid. For heavy loads and wide spans.



1 5/8" Hy-Rib for floors and roofs without forms—sidings, partitions and ceilings without channels.



1 3/8" Hy-Rib—Widely used in partitions, sidings and ceilings.



3/4" Hy-Rib Lath used as a self-furring lath and in partitions, ceilings, etc., for stud spacings 24 to 36 inches.



Kahn Pressed Steel Channel Studs, 2", 3", 4", 5" and 6"



It's the Strength of the Ribs that Counts.

HY-RIB, RIB LATH, STEEL STUDS, Etc.

HY-RIB is a deep ribbed steel reinforcement and is manufactured in four depths from 1 1/2" to 3/4", and each of these in various gauges. **HY-RIB** eliminates forms in concrete floors and roofs and eliminates channels in partitions, sidings and ceilings. 3/4" Hy-Rib Lath is widely used in connection with Kahn Pressed Steel Studs, permitting spacings of from 24 to 36 inches in walls, partitions and ceilings.

RIB LATH is the stiffest steel lath, and in the heavier grades permits two-coat plaster work instead of three—saving in time, labor and materials—also allows wide stud spacing. **RIB LATH** is manufactured in three types and various gauges.

DETROIT DIAMOND LATH—a diamond mesh lath furnished in various gauges and plain, painted or galvanized.

KAHN PRESSED STEEL STUDS—Channels without prongs are furnished in sizes from 3/4" to 2". Steel Studs with prongs for attaching metal lath are furnished in sizes from 2" to 6" and are capable of supporting loads. Hollow Steel Studs made of two 3/4" channels united by spacers are furnished in 2", 3" and 4" sizes.

KAHN PRESSED STEEL SILL PLATES, ANGLES, FURRING STRIPS, BEAMS, ETC., are made in many shapes and sizes to meet all building requirements.

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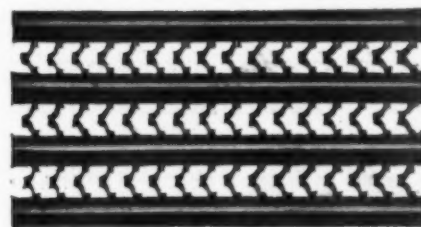


TRUSSED CONCRETE STEEL CO.

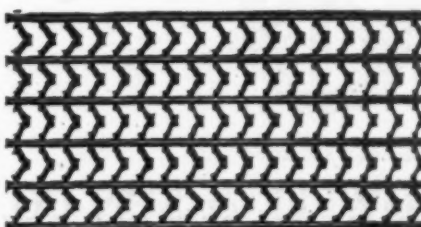
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Standard Rib Lath in 3 gauges. Also "B" Rib Lath, similar in design.



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Write for catalog listing complete lines of nuts, bolts, rivets, etc.

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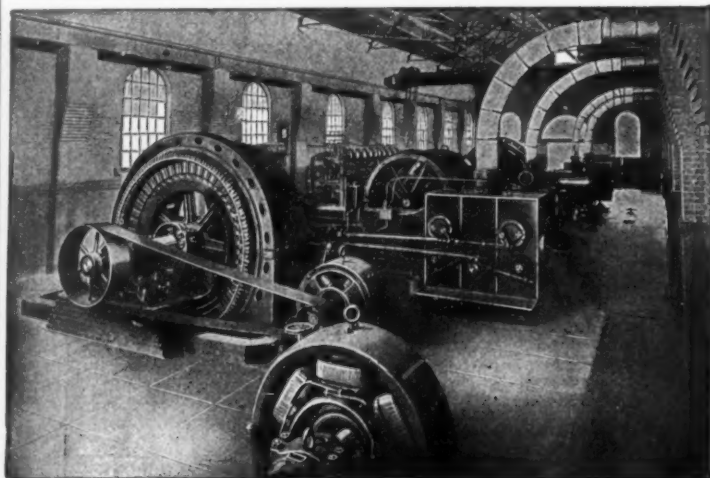
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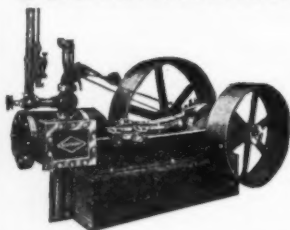
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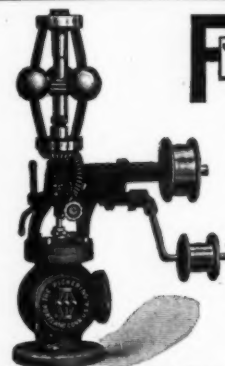
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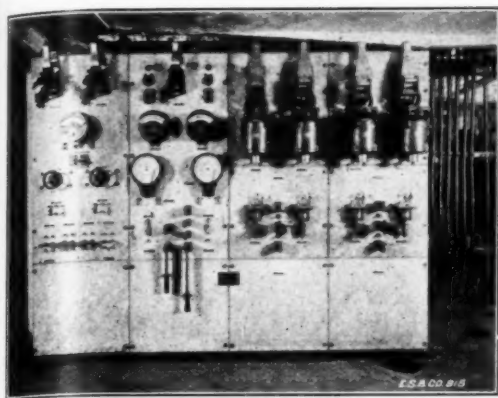
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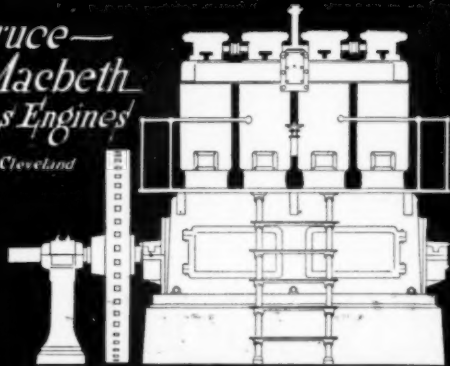
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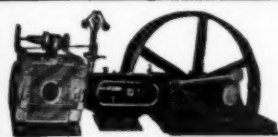
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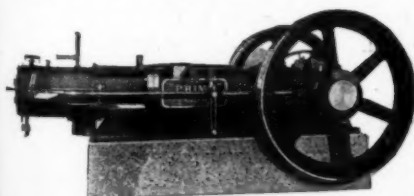
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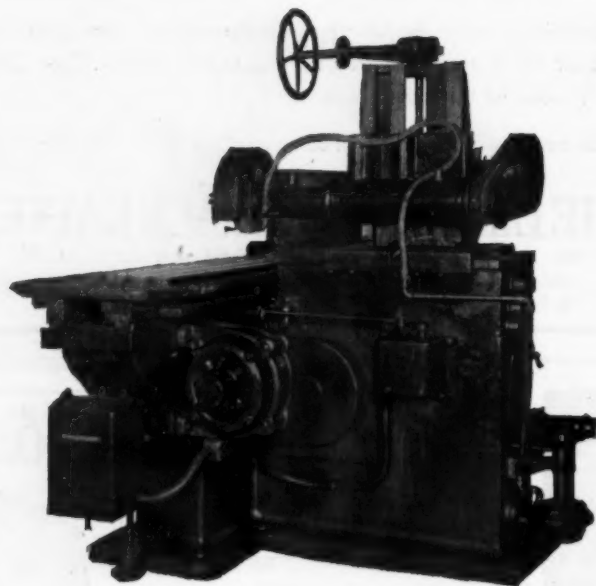
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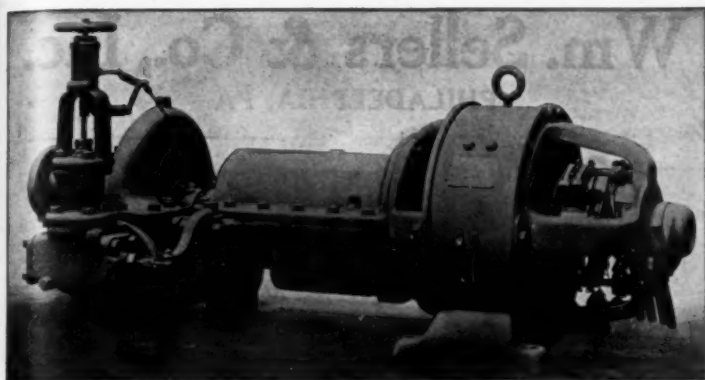
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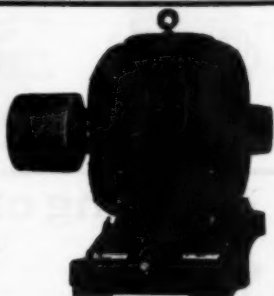
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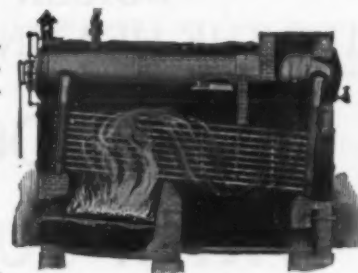
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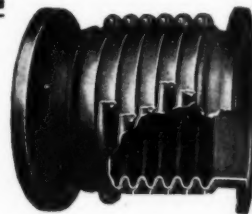
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You install a slip joint to take care of the pipe expansion—but you must look after it—you must see that it is properly packed—it often leaks. You install a



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The best grade of materials is used in their construction; each part is made of a composition particularly adapted for the duty it performs; the body, stem, hub, union ring and stuffing-box being made of bronze, while the **seat ring and disc**,—the parts subjected to the greatest wear, are made of a **high-nickel alloy**. All parts are accurately machined, tested and assembled, and the complete valve given a final test under more than service conditions.

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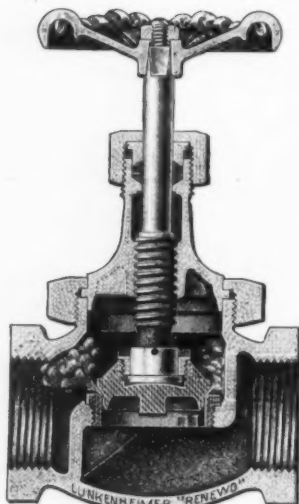
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Oil Separator and Purifier does not scale. The exhaust steam enters and leaves the heater at the top, passing inside of the seamless brass tubes, therefore the tubes cannot fill up with scale, as they do in other water tube heaters. This provides an oil separator and cool settling chamber in the bottom, where the sediment settles away from the tubes and remains soft until removed.

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where hard and impure water is used and 10% where soft water is used can be effected by installing a

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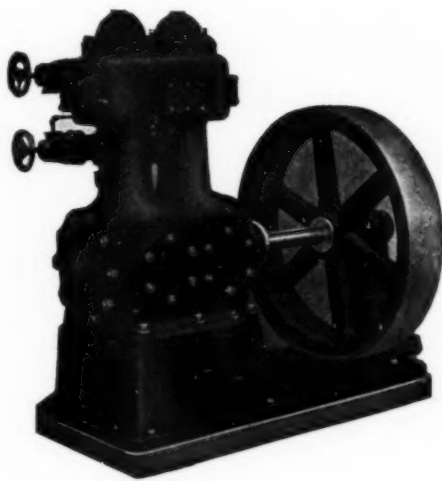
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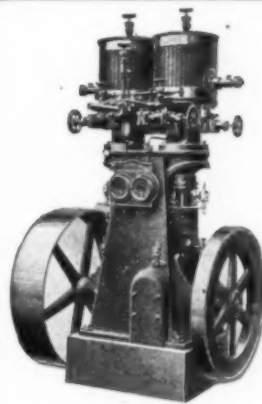
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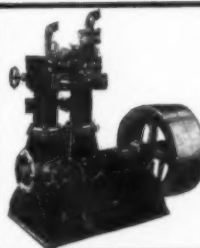
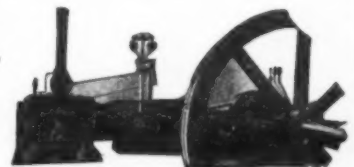
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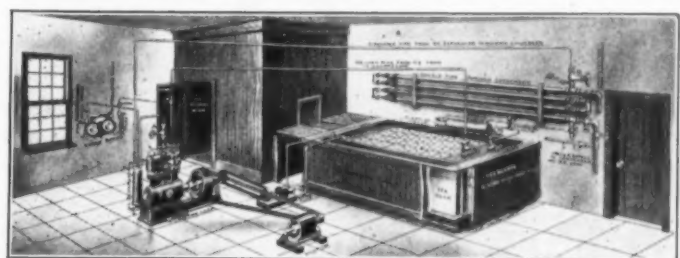
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Ice-Making Plants from one to eight tons capacity.

Portable Ice Plants, 300 pounds to 1000 pounds capacity.

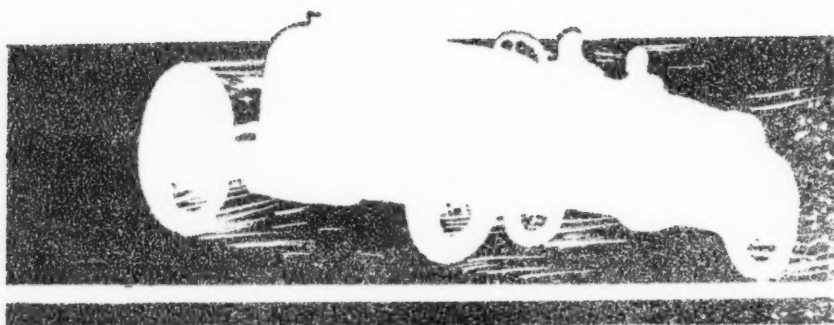
Drinking Water Plants for Mills and Offices

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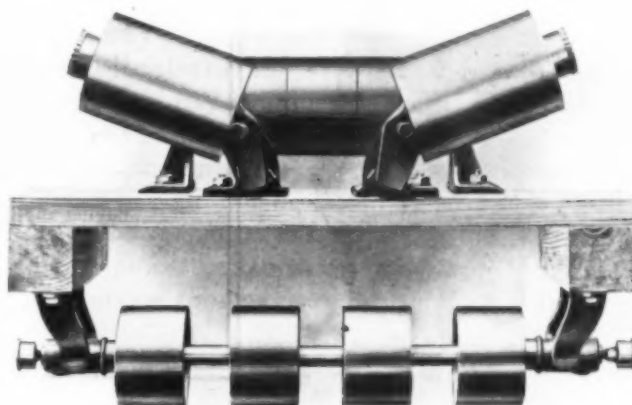
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TAMPA**More About Conveyor
Rollers**

Some conveyor rolls are "belt killers."

With rigid bearings, steep troughing angles, openings at the troughing point, poor lubrication, etc., they cause more wear on the belt than does the material carried.

Good belts cost enough to make good rollers pay.

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Adjustable Troughing
Roller for Conveyors**

Will increase the life of the belt under any working condition.

Study these *advantages* carefully—no other roller has all of them.

The maximum troughing angle is 20°. The troughing angle is adjustable. There is no gap or opening at the troughing point. The bearings are self-adjusting. A large portion of the belt width runs flat. The lubrication is practical and positive. The rims of the troughing pulleys are reinforced. The rollers are ample in width for the belt. Shafting 1½ inches diameter is used even in the smaller sizes. All pulleys are 6 inches diameter, with turned surfaces. The principal parts are the same for all sizes, and are interchangeable.

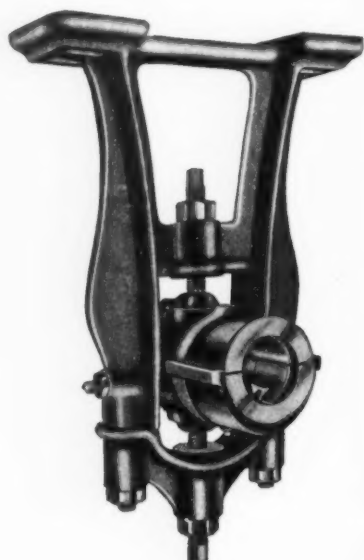


These points are discussed more fully in "Book 2"—your copy is ready—where shall we send it?

MAIN BELTING COMPANYPhiladelphia
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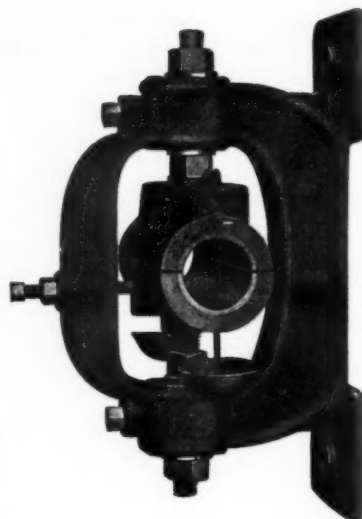
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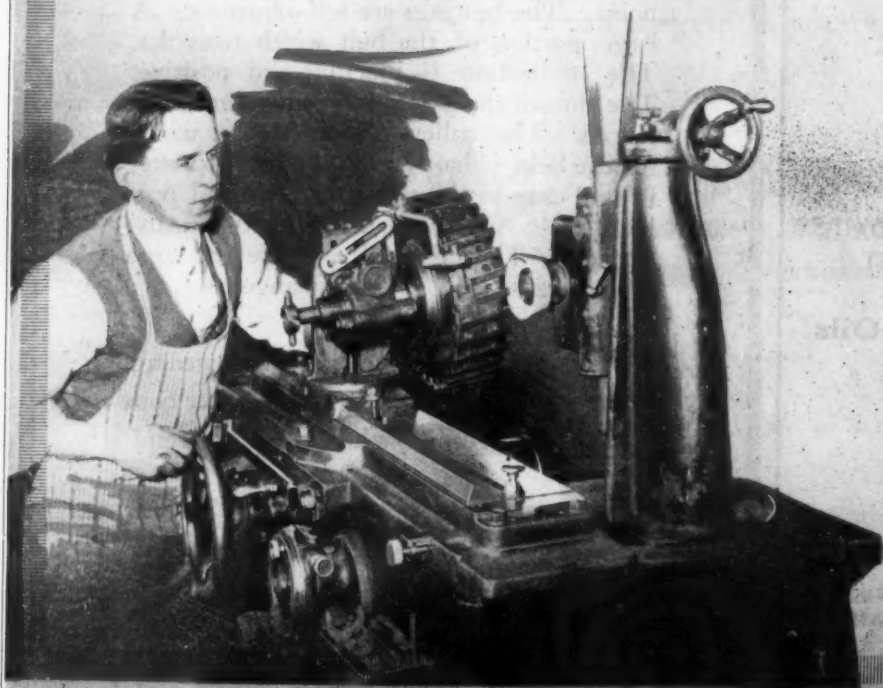
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In Your Dusty Flour Mill

You know the trouble caused by dust and grit getting into your machinery. You won't have to endure this condition if you install

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They are the ideal apparatus for reducing the speed of electric motors. The entire mechanism is wholly enclosed and a moment's consideration will enable you to appreciate their various superiorities over present methods of speed-reduction. The power is taken from three points, making a well-balanced drive of great emergency strength. Made in H. P. 1 to 100; ratios 4:1 up to 1600:1.

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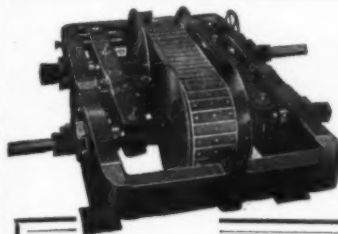
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Shafting, Belting, Mill and Elevator Supplies in Stock
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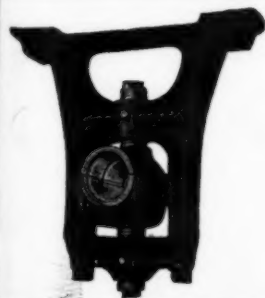
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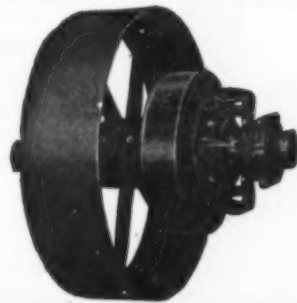


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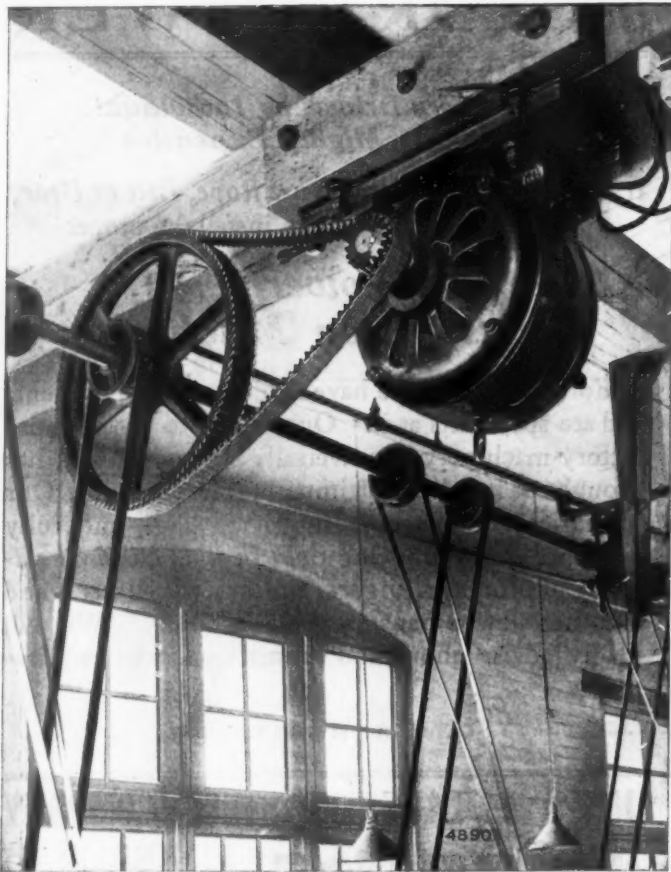
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Therefore, it pays to put a permanent and satisfactory transmission on your lineshaft—a transmission which is as flexible as a belt, as positive as a gear—and more efficient than either—The Link-Belt Silent Drive.

It requires no attention except periodic oiling and is 98.2% efficient during its entire life. Look around your shop and see if you cannot stop power wastes with Link-Belt Silent Chain Drives.

Write for Data Book No. 125 and figure the cost of a drive for your work or send for a Link-Belt Service man. Try one drive and you will soon standardize with Silent Chains.

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For progress stops when one is satisfied—others move while you stand still.

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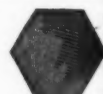
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SHORT
LENGTHS



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Among the promoters of the new Insurance Company was the head of one of Boston's largest and oldest manufacturing companies.

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Are you listening, Mr. Engineer? Your clients are.

Said the elevator expert: "The greatest thing in elevators is a machine called the Ridgeway Steam Hydraulic. You send for Ridgeway and do just what he tells you to do. He has the most wonderful thing in elevators the world has ever seen."

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If you are a hundredth man, you will catch on and find out yourself what it means to

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THE RIDGWAY & SON CO., Coatesville, Pa.

Elevator Makers to Folks Who Know

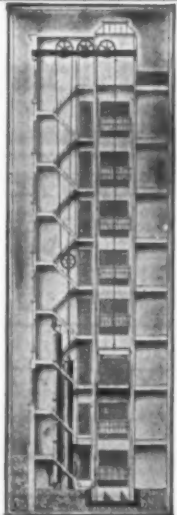


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Nearly 2000
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American Elevators Built by AMERICAN ELEVATOR & MACHINE CO. INCORPORATED LOUISVILLE KY.

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All Types for Any Service

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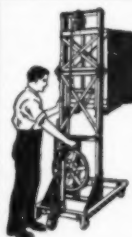
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All Powers.

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We install portable or permanent conveyor systems as desired.

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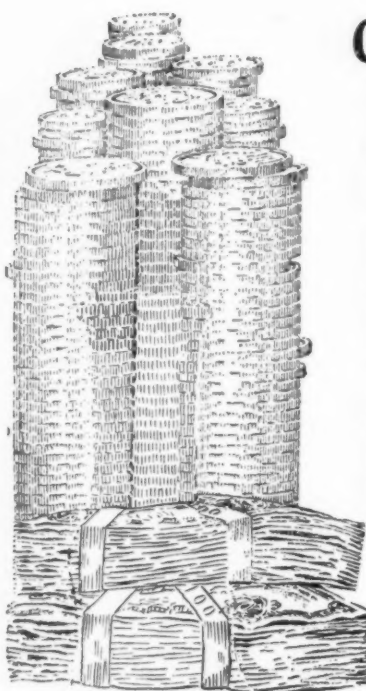
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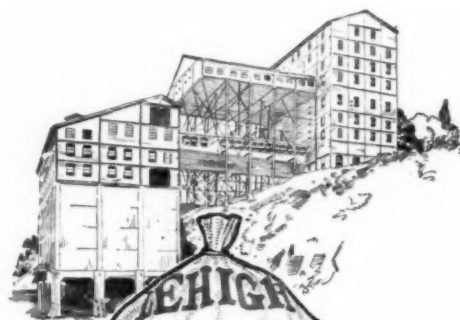


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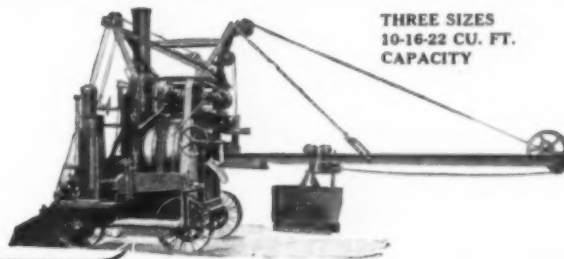
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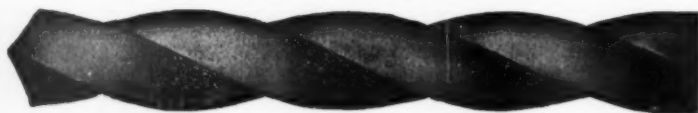
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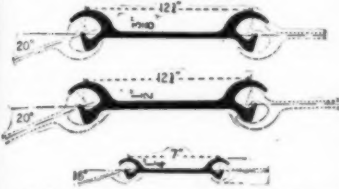
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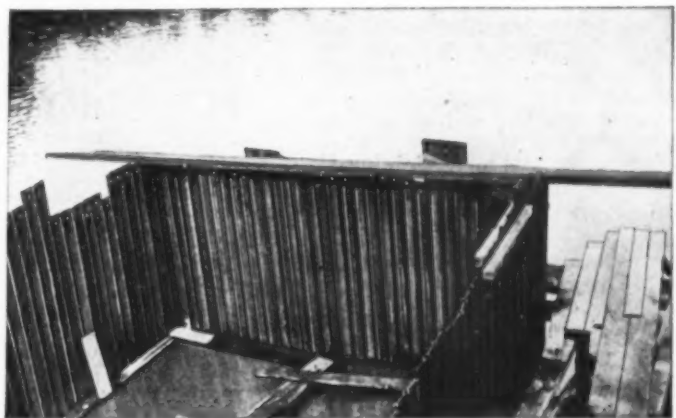
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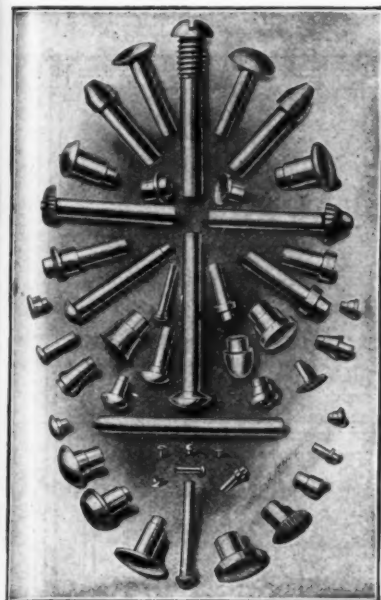
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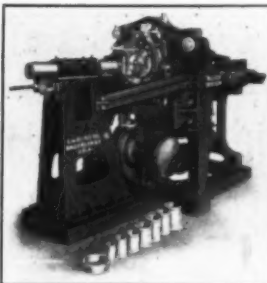
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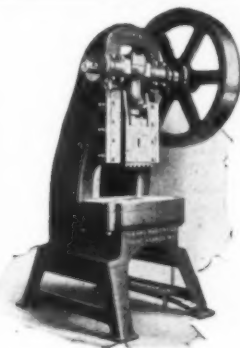
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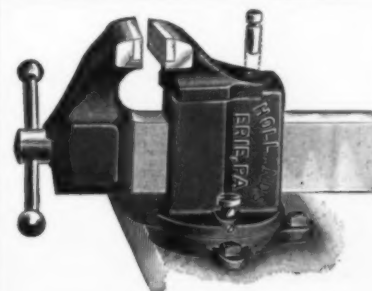
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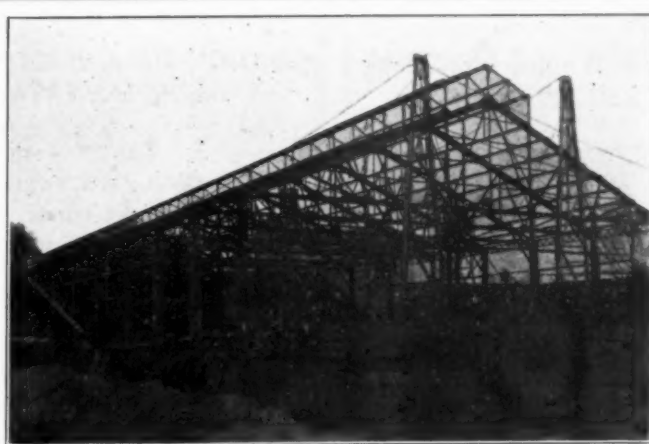
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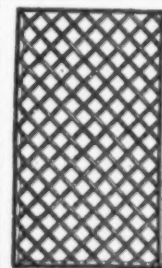
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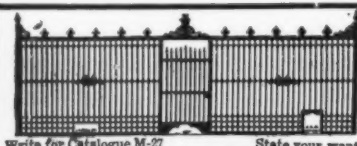
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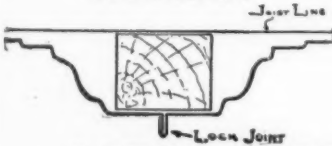
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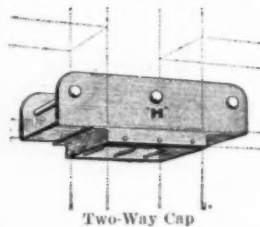
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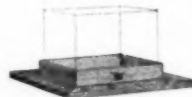
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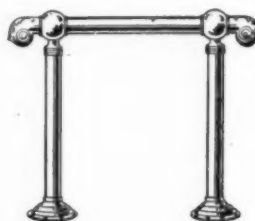
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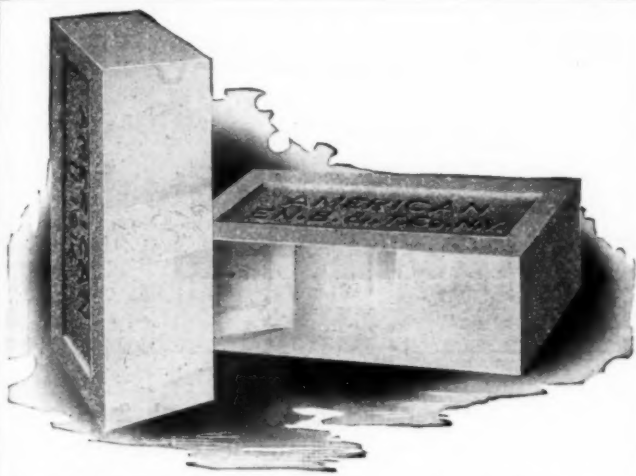
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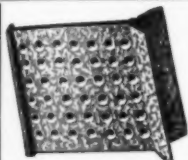
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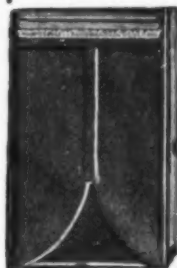
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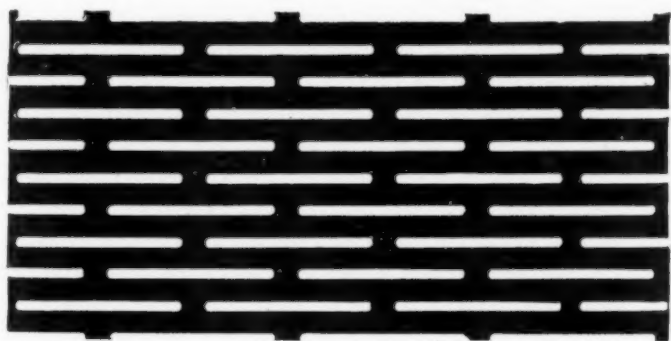
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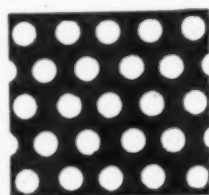
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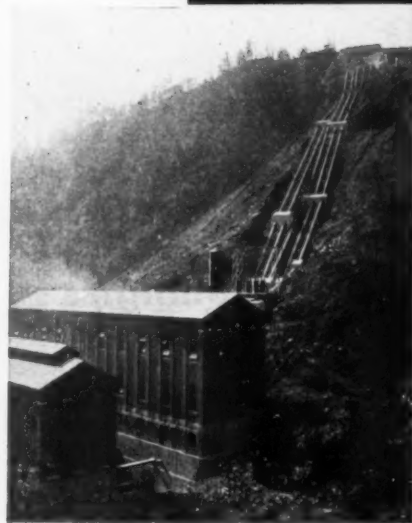
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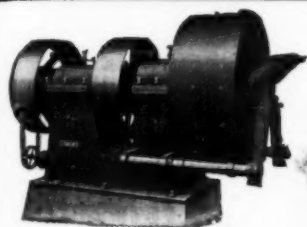
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Covered in its entirety with interlocking tile on pitched roofs and flat 1½-inch tile on flat roofs, a total of over 500,000 sq. ft.



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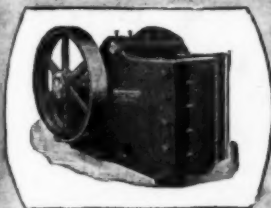
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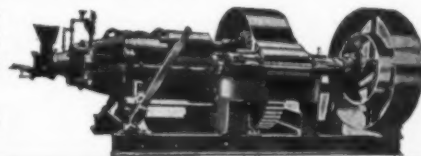
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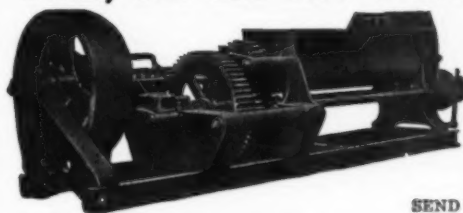
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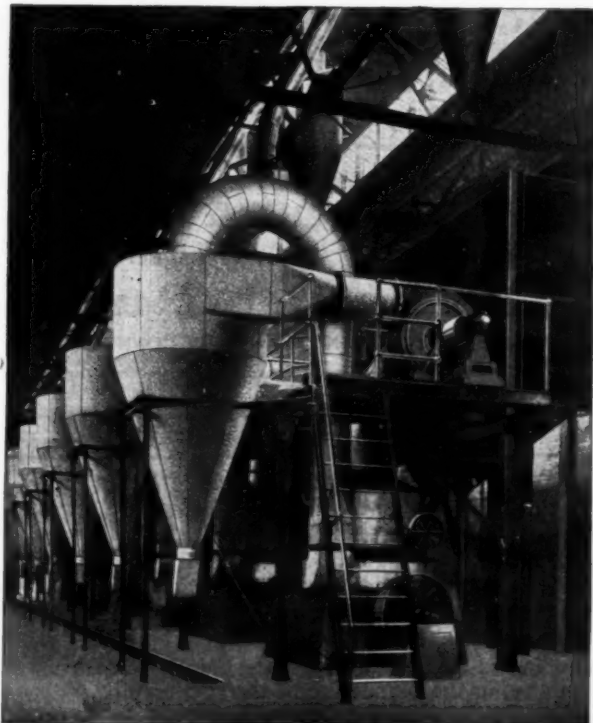
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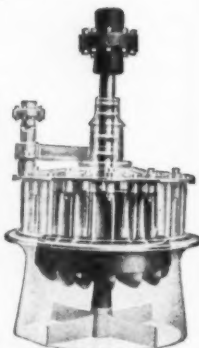
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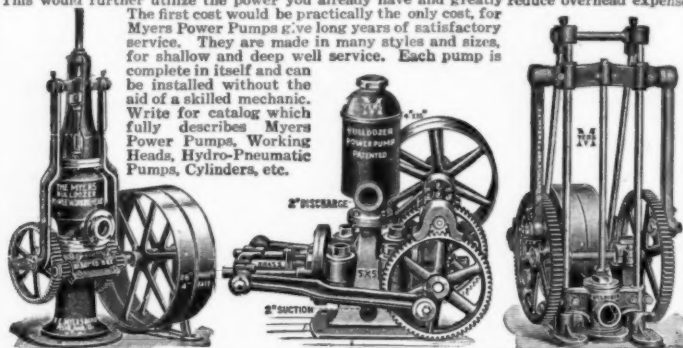
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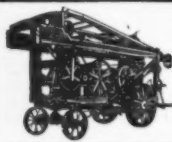
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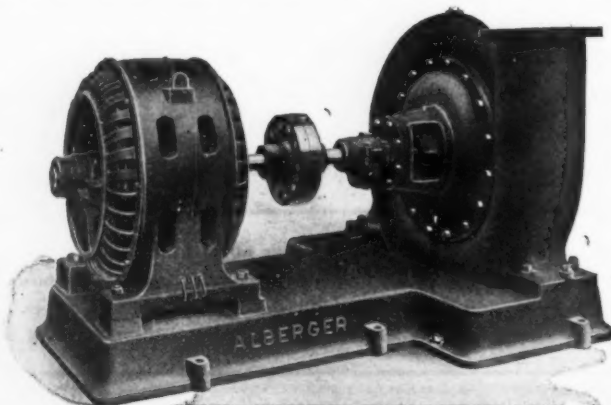
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They are of the horizontal shaft, single suction impeller type. The suction opening is at the side furthest from the driving power, thus simplifying the connecting of the suction pipe.

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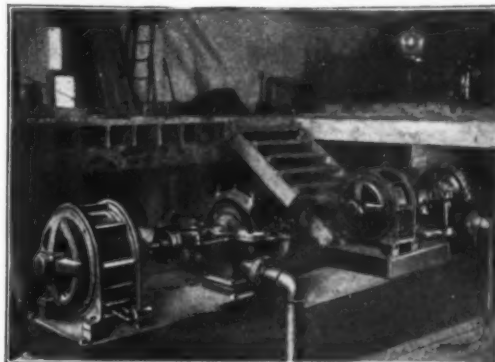
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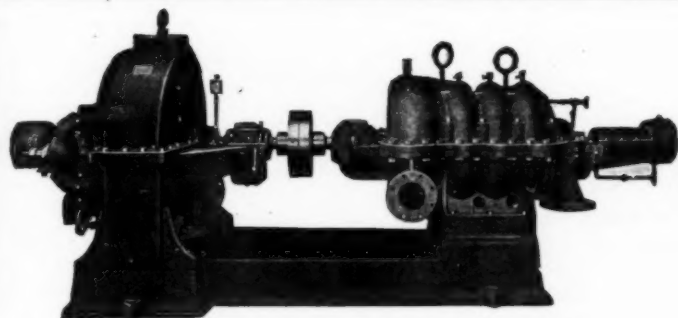
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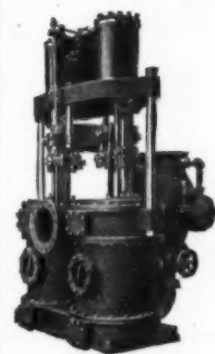
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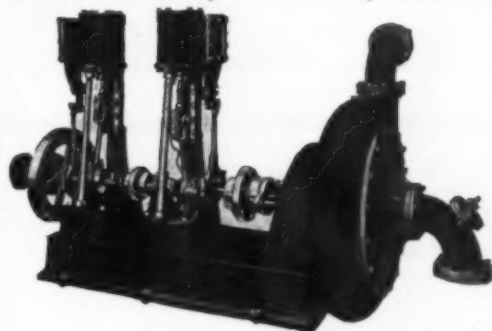
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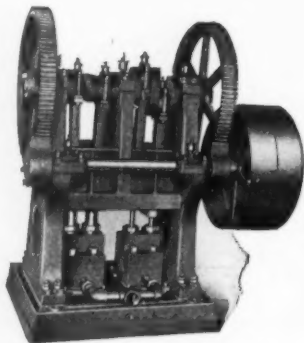
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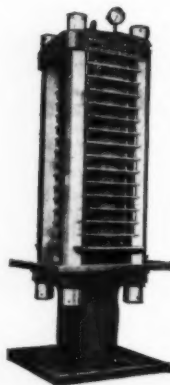
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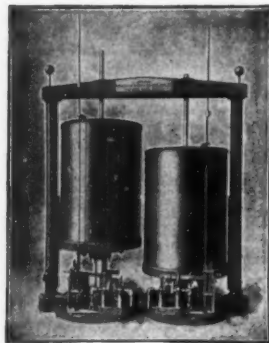
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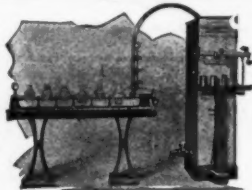
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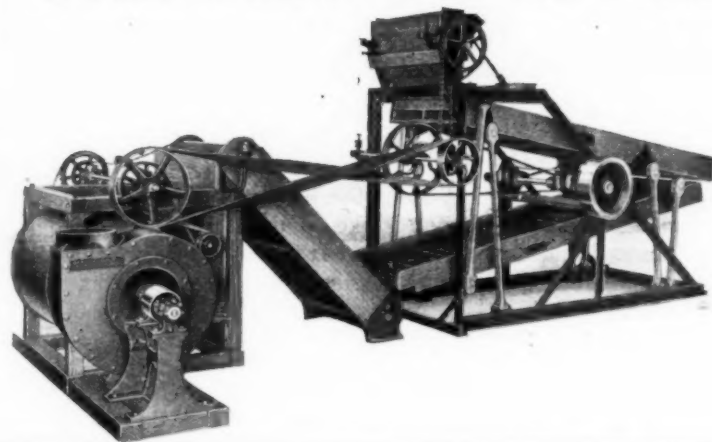
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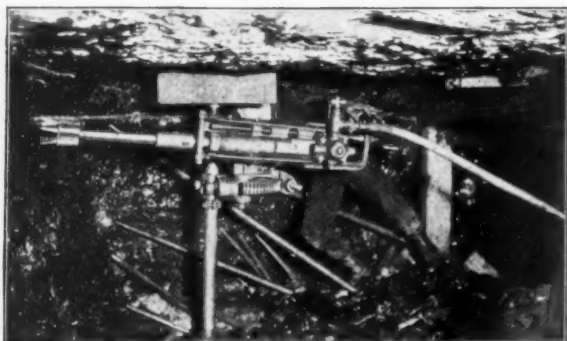
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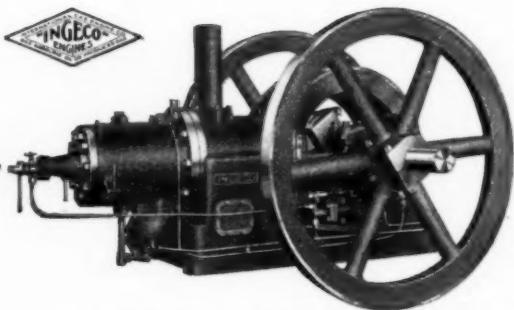


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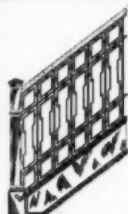
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Consult Our Engineers.—If contemplating new or additional power equipment, confer with our engineers. Bulletin on request.

International Gas Engine Co. 146 Holthoff Place, CUHADY, WIS.
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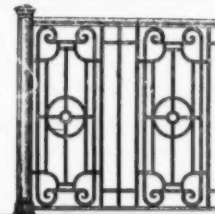


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THE COST IS NOMINAL. NO EXPENSE FOR KILNS. NO FIRE RISK.
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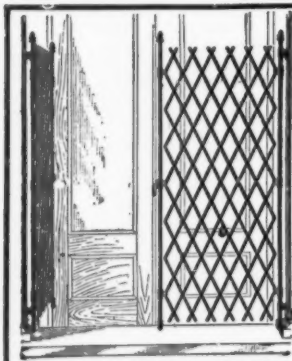
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THERE ARE
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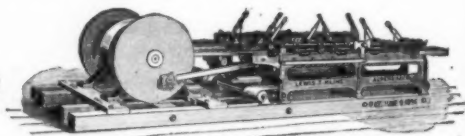
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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

VOL. LXVII. No. 24. }
WEEKLY.

BALTIMORE, JUNE 17, 1915.

{ \$4.00 A YEAR.
{ SINGLE COPIES, 15 CENTS.

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FRANK GOULD, Vice-Pres. I. S. FIELD, Sec'y.

RICHARD H. EDMONDS, Editor and General Manager

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AN UNWISE EFFORT TO STOP THE SELLING OF WAR MATERIALS.

American Citizens:

UPHOLD THE HANDS OF THE PRESIDENT
in his noble efforts to PRESERVE PEACE by
urging that Congress empower him to STOP
the EXPORTATION of ARMS and AMMUNI-
TION from the United States to Europe.

BLANK PETITIONS

Ready for signature FREE The Organization of American
May be obtained Women for Strict Neutrality.
Address: Organization Headquarters, Roland Ave., Roland
Park, Baltimore, Md.

The above is a copy of a large poster which is being billed all over the country that carries an entirely false impression. In reading this poster one would naturally gain the idea that it is intended to be an aid to the President of the United States, and that he is desirous that Congress should empower him to stop the exportation of arms and ammunition to Europe. It is skilfully prepared and doubtless has deceived many.

If this organization had announced that it was largely dominated by German influence, its campaign could at least have received the commendation of frankness. Men and women cannot be blamed for loving their native land or the land of their parents and for seeking to advance its interests as much as possible as long as they do not in any way whatever violate their fealty to this country nor undertake to convey false impressions. Dr. Dernburg, who did more by his tactless campaign to solidify the people of the United States against Germany than anyone else, was at least open enough to let it be known that he was working wholly in the interests of his own country. The "Organization of American Women for Strict Neutrality" in this poster addressed to "American Citizens" apparently seeks to convey an entirely erroneous impression. The President of the United States has neither asked nor desired its co-operation in having Congress empower him to stop the exportation of arms. On the contrary, the President of the United States fully understands that the exportation of arms is absolutely legal under all international obligations and is likewise as moral as it is legal, and that to prevent their exportation would be the very opposite of neutrality.

It is greatly to be regretted that this organization has permitted itself to be misled by sending out

such a poster as we have quoted. Its work, however, like that of Dr. Dernburg and Wm. J. Bryan, will simply react upon itself and intensify and solidify the sentiment of this country against any effort to create false issues. That some American women having no particular German affiliations may be members of this organization does not in the slightest change the fact that if its work were successful it would inure wholly to the advantage of Germany. Had this organization been more wisely guided it would have openly announced that some of its members, in the interest of Germany, the native land of some, or the land of their parents, were openly and squarely seeking to suppress the shipment of arms to the Allies in order to enable Germany to conquer them and thus bring about peace it would have secured the credit which it can never now attain. It is time for the public to understand the influence largely dominating this organization and to know that its poster addressed to "American Citizens" is misleading in its wording.

On this question of selling war materials Colonel Roosevelt has recently stated the case so clearly that we republish an extract from a long letter, in the course of which he said:

"Our people also need to come to their sense about the manufacture and sale of arms and ammunition. Of course, the same moral law applies here between nations as between individuals within a nation. There is not the slightest difference between selling ammunition in time of war and in time of peace, because when sold in time of peace it is only sold with a view to the possibility or likelihood of war. It should never be sold to people who will make bad use of it, and it should freely be sold at all times to those who will use it for a proper purpose. It is absolutely essential that we should have stores where citizens of a nation can buy arms and ammunition. It is a service to good citizenship to sell a revolver to an honest householder for use against burglars or to a policeman for use against gunmen. It is an outrage against humanity knowingly to sell such a revolver to a burglar or a gunman. The morality of the sale depends upon the purpose and the probable use. This is true among individuals. It is no less true among nations. I am speaking of the moral right.

"Our legal right to sell ammunition to the Allies is, of course, perfect, just as Germany, the greatest trader in ammunition to other nations in the past, had an entire legal right to sell guns and ammunition to Turkey, for instance. But, in addition to our legal right to sell ammunition to those engaged in trying to restore Belgium to her own people, it is also our moral duty to do so, precisely as it is a moral duty to sell arms to policemen for use against gunmen."

"OFFICIALS DISMAYED" BUT THE COUNTRY ENCOURAGED.

UNDER the heading "Officials Dismayed" a dispatch to the New York Sun from Washington in regard to the defeat of the Government in the Cash Register suit says:

Officials of the Department were dismayed by the decision. This case, following so closely on the heels of the decision favorable to the Steel Corporation case and other recent anti-trust decisions against the Government, has raised in the minds of Washington officials serious doubt as to the future enforcement of the Sherman anti-trust law along what they regard as practical lines.

If all the "officials" in all the legal departments of the Government who for years have viciously

fought the business interests of the country could only be "dismayed," we would probably see an immediate great revival in business throughout the country. For eight or ten years officialdom has fought an unceasing war upon business and has constantly endeavored to try cases through public attacks instead of waiting the final decision of the courts. In this Cash Register case, for instance, who does not remember the attacks upon this company and its officers daily ladled out from Washington and filling the newspapers of the land? If they are honest, the men guilty of thus trying to besmirch the character of citizens before they had been proven guilty and the newspapers that published this stuff owe an apology to the officials of the National Cash Register, who by the highest court of the land have been declared guiltless. Indeed, they owe the apology whether honest or dishonest at heart, but only the honest ones will recognize their responsibility to make it.

Gradually the courts of the land are unshackling the business interests of the country and breaking the chains which the mob spirit and political demagogues were for some years forging around the business men of the nation. Once more we are coming to a time when men shall not be hounded by Government or by the mob merely because they are great developers of trade and industry. We are nearing the time when a man will not be ashamed to be known as successful.

SOME STRAWS WHICH INDICATE THE TREND OF BUSINESS ACTIVITIES.

REPORTS from various sections, especially from New York, Pittsburgh and New England, indicate continued activity in the placing of heavy orders for war materials. Moreover, there are many dispatches reporting the development of industrial activities based on the needs which have been brought about by these heavy orders.

It is claimed that the Bethlehem Steel Co. will spend \$12,500,000 on the enlargement of some of its plants, and that it will also establish a new shipyard in order to help meet the heavy demand on shipbuilders. It is also reported that the Cramps have sold their stock in the well-known Cramp shipyard and that new interests will take hold of it and develop this long-established concern. The Baldwin Locomotive Works is reported as having received a \$6,000,000 contract for locomotives for Russia, and rumors are again rife that the Pennsylvania Steel Co., which owns the Maryland Steel Co., will be taken over from the Pennsylvania Railroad, the controlling owner, by new interests. The Pennsylvania Steel Co. owns in Cuba about 500,000,000 or 600,000,000 tons of ore. So vast a quantity of ore needs a larger development, and if the rumor that W. H. Donner and others associated with him will purchase the Pennsylvania Steel Co. should prove correct, then a very great development of the plant of the Maryland Steel Co. at Sparrows Point, Md., and probably the Pennsylvania Steel Co. at Steelton, Pa., would naturally follow.

New England people, with the shrewdness that has generally marked their investment activity, are said to be purchasing liberally of stocks of American shipyards, recognizing the fact that we are entering upon a period of very great shipbuilding development. Many American yards are already crowded with work which will keep them busy for a year or two. Indeed, some yards are reported to have work enough in sight to keep their present plant in operation for five years. It may be accepted as an absolute certainty that, regardless of present international complications, there will be an enormous expansion in shipbuilding in this country both for the

Government and for merchant marine work. With the very large increase in shipbuilding activities, the demand for new ships promises to far exceed the capacity of existing yards.

The return of many foreigners to become soldiers in their native lands and the shortage in immigration since the war will likely be followed by an increasing scarcity of labor for industrial work, especially in railroad and kindred construction operations and in iron and steel shops. This labor shortage, which is apparently nearly in sight, will doubtless stimulate all manufacturing enterprises to put in as much labor-saving machinery as possible in order to meet this situation. Even now it is reported that orders aggregating millions of dollars for war materials are going a-begging because concerns equipped for this business are already fully employed and are unwilling or unable to take on larger contracts. Some concerns, of course, are very greatly increasing their producing capacity in order to meet these conditions, while others have as much work on hand as they are willing to undertake.

The MANUFACTURERS RECORD renews the suggestion made last week that many Southern concerns ought to be looking into the possibilities of securing orders for war materials on a sufficiently large scale to justify any extensions or improvements that might be necessary.

In many directions there are signs of increasing business activity. Copper, zinc and lead have advanced heavily in price, while pig-iron is being marked up under better demand. The assurance of another great wheat crop, possibly exceeding the record yield of last year, is of international as well as of national importance. It will necessarily help to swell the business of the railroads and to increase the prosperity of the farmers of the country. And before the activity in many lines now existing, due to the demand for war materials, shall have ended, the needs of the railroads for increased rolling stock, for betterments to roadbeds and extensions and the development of other industrial interests will doubtless stimulate a broad development of all the business activities of the country.

The general outlook is such that for the whole country, and especially for the South, the time has come to put aside all spirit of pessimism, and with optimism in action begin a broad development of all business activities.

In common parlance, the time has come for the South to "split on its hands and take a fresh hold."

Let's get to work.

SHIPBUILDING YARDS FOR SOUTH.

IN view of the certainty that this country is entering upon a period of very great shipbuilding activity, both for naval vessels and for the merchant marine, it is of special interest that at least one Southern port is likely to secure the establishment of a large shipyard. Mr. E. W. Hyde of Bath, Maine, long connected with the shipbuilding interests of that city, in referring to the announcement recently made in the MANUFACTURERS RECORD that he was planning a \$4,000,000 shipyard to be built at Mobile, in a letter to the MANUFACTURERS RECORD says:

The arrangements for establishing a shipbuilding plant at Mobile have not gone far enough to give out the information asked for. A site has been selected and the plans and estimates are being made for the buildings, ways and drydock. The amount of capital will then be determined and the company organized.

It is of very great importance to the whole country as well as to the South that shipyards, with facilities for building large boats, should be established in the South. Nearly all of the shipyards in this country are filled up with work for the next year or two, and it is claimed that some of them have work ahead for four or five years.

At the present time prices in Europe for shipbuilding materials are much higher than in this country, and with the determination of the entire country that we shall no longer be dependent upon foreign ships to the same extent as in the past, and that we must have a navy ample for protection of our Atlantic, Gulf and Pacific coasts, there will be

a demand for ship work far in excess of the capacity of existing yards. Indeed, when we contemplate our limited shipbuilding capacity as compared with the population and wealth of the country and with our industrial supremacy in many lines, one can but marvel at the smallness of it. It is to be hoped that the yard projected by Mr. Hyde will soon materialize and that other shipyards will be established at Southern ports.

THE WAREHOUSING OF COTTON.

INVESTIGATIONS under the auspices of the National Department of Agriculture indicate that if all storage-houses, including those of cotton mills, in the cotton-growing States were used, every bale of the average crop could be stored, under certain conditions. According to a bulletin of the Department by Robert L. Nixon, assistant in cotton marketing, the estimated number, with the storage capacity, of warehouses and cotton-mill warehouses in cotton-growing States now in use, compared with production of each State in running bales in 1913, is as follows:

State.	Warehouses.		Cotton mills.		Combined storage capacity.	1913 production in running bales.
	No.	Capacity in bales as offered.	No.	Capacity in flat bales.		
Alabama	581	1,884,355	62	62,000	1,946,355	1,483,669
Arkansas	233	965,800	6	6,000	971,800	1,038,293
Florida	51	357,830	1	1,000	358,830	66,700
Georgia	1,089	1,693,280	151	412,500	2,105,780	2,346,237
Louisiana	200	1,095,930	6	6,000	1,101,930	436,865
Mississippi	167	1,525,810	18	18,000	1,543,810	1,251,841
North Carolina.....	149	264,446	326	400,995	665,441	842,499
Oklahoma	120	842,330	7	7,000	849,330	837,995
South Carolina.....	337	1,363,560	164	300,000	1,663,560	1,418,704
Tennessee	31	919,435	27	27,000	946,435	366,786
Texas	497	2,513,324	36	36,000	2,549,324	3,773,024
Virginia	30	316,580	19	19,000	335,580	24,569
All others.....	95,629
Total.....	3,485	13,742,680	823	1,295,495	15,038,175	13,982,811

But Mr. Nixon points out that this total storage capacity by no means implies that every person who has cotton is able to store it on favorable terms. In a good many cases the abundant warehouse facilities are to be found at concentration points for the shipment of cotton in States raising comparatively little of the staple, while the States producing the bulk of the crop are inadequately equipped as to warehouses. For instance, Virginia raised in 1913 only 24,569 bales and Florida only 66,700 bales. But the 49 warehouses of the first-named State have storage capacity for 335,580 bales, or an average of 6849 bales to each warehouse, and the 52 warehouses of the second have an aggregate storage capacity of 358,830 bales, or an average of 6900 bales. On the other hand, Texas, which in 1913 raised 3,773,024 bales, or nearly 28 per cent. of the total crop of the country, has 2,549,324-bale storage capacity in 533 warehouses, an average of 4783 bales to each warehouse, and Georgia, ranking second among the States in production, with 2,346,237 bales, having in its 1240 warehouses capacity for 2,105,780 bales, or an average of 1698 bales.

Even where there are warehouses conveniently located, they are not always efficient in their service. Mr. Nixon points out that most of the best storage-houses belong to the cotton mills, which use them for cotton which they have bought for spinning, and to cotton factors or commission merchants forced to operate them in handling the cotton which is consigned to them for sale. The small warehouses in primary markets are held to be unsatisfactory because the cost of handling cotton in them is much greater than in larger establishments, and the insurance rate is usually four or five times as great as in the standard warehouses in the larger centers. The unbusinesslike methods of handling the great portion of the cotton crop and the uncertainties as to patronage in existing conditions are largely responsible for the inadequacy of facilities in the smaller communities. The solution of the difficulty in this particular seems to lie in the direction of co-operative associations of farmers to build and operate their own warehouses. This plan has been put into effect at

many points in the South, and, indeed, at several points in Texas, Louisiana, Tennessee, Georgia, South Carolina and Alabama model cotton warehousing is under way. But students of the situation, impressed by the far-reaching importance of the proper handling of the cotton crop to the advantage of everyone concerned—farmers, factors, transportation interests and manufacturers—realize that only a beginning has been made in the organization of the handling of the cotton crop, and they feel that enormous benefits will accrue from a modern warehousing system liberally financed and conducted on a broad businesslike plane. The arguments for such a system are summarized by Mr. Nixon as follows:

1. Financing is one of the greatest problems in marketing cotton. A sufficient number of warehouses would be erected if it were possible in the present emergency to borrow on cotton when stored.

2. Cotton is considered the very best collateral, but it is not available unless safely stored and insured. The banks are always willing to accept cotton as security, but during emergencies their capital is insufficient to meet demands.

3. A system of warehouses would simplify our financial system and eventually free the Southern cotton farmer from the present disastrous credit system. It would stabilize the price of cotton by distributing sales throughout the

year. The farmer would stop depressing the price of his own products by selling his cotton as soon as it is ginned.

4. In storage capacity the present cotton warehouses are ample, but these warehouses are poorly distributed. The best warehouses are not available to the farmer. The charges of the others are too high, because they must pay a high insurance rate, and the cost of handling is necessarily great. Some new standard buildings should be erected, but many of those now in use should be remodeled.

5. Cotton keeps in storage better than any other farm product. Protected from the weather, it never deteriorates. It resists decay even when exposed. Consequently it is neglected more than any other valuable product. The cotton mills should encourage storing by paying a premium for cotton in good condition.

6. The dealers, or middlemen as they are frequently called, are in much better position to hold cotton than the farmers. They not only control the best storage houses, but have better financial connections, which enable them to get money more readily and on better terms. The farmer sells his cotton when prices are depressed, and the dealer gets the full benefit of any advance after the rush is over.

7. A large standard storage-house pays ample dividends, while most of the owners of small warehouses actually lose money on the investment. The fact that the best warehouses belong to the factors, and the cotton mills are not available to the farmer, makes it desirable for the farmers to co-operate in building their own houses. If they do not, they must remain dependent upon the factors.

8. All warehouses should conform fully to the standards recognized by the underwriters' associations. This will save cost in construction, in handling cotton and in insurance.

Surely these suggestions are worthy of careful consideration on the part of every man concerned with the cotton crop from the planting to the final marketing of the finished goods. A crop which, with its seed, is worth in a normal year a billion dollars, one-tenth of the value of the agricultural production of the country, which is a basis of a world industry second only to that of iron and steel in the value of its annual output, and which supplies in the export trade of the United States a value greater than the value of the annual output of all the gold mines of the world, calls for in this day of the conservation of energy and of materials all of the acumen and judgment possible in order that the most may be made of it. In the handling of the crop the warehousing is an essential fundamental element.

POTASH SALTS IN 1914.

AGRICULTURISTS and fertilizer manufacturers may differ about the necessity for a supply of potash salts at present, but in a review for the National Geological Survey of importations of potash salts in 1914 W. C. Phalen calls attention to the fact that the soap-making, match-making, glass-making, photographic and pharmaceutical industries and the chemical industry in general have felt the deficiency of potash. He presents in tabular form a comparison of imports of potash salts in 1914 with those of preceding years which offers an opportunity for a study of the effects of the European war upon such importations. The total quantity of potash salts imported in 1914 was 485,818,459 pounds, valued at \$8,743,973, a decrease under 1913 importations of 126,686,457 pounds in quantity and \$2,061,747 in value. The quantity imported in 1914 was 184,303,926 pounds less than the importation of 1911. The year's history of the decline in 1914 from 1913 is clearly shown by Mr. Phalen. In the first three months of 1914 the importations amounted to 178,440,879 pounds, an increase of 872,306 pounds over the first three months of 1913. In the second quarter of 1914 the importations were 165,813,768 pounds, an increase of 54,764,623 pounds, or a total increase in the first six months of the year of 55,636,929 pounds. In July, August and September the importations dropped to 92,654,921 pounds, a decrease under the importations of the preceding three months of 73,158,874 pounds and 17,521,918 pounds more than the increase in the first six months of 1914. There was a decline in the last three months of the year to 48,908,891 pounds, or 135,067,900 pounds less than the importations in the last quarter of 1913.

The deficiency in the supply of potash from the usual sources has spurred investigations into possible sources in this country. The search by the Geological Survey in the Black Rock Desert of Nevada has not, according to Mr. Phalen, reached a point that would justify a definite conclusion either for or against the original desert-basin hypothesis of the occurrence of workable bodies of soluble potash salts. Although, on account of the large field to be explored and the limited facilities for exploration, confidence in the search increases, and another season's work is hoped may lead to a definite conclusion. The experimental plant dealing with the saline deposits at Searles Lake, Cal., has attained sodium carbonate, sodium chloride and sodium sulphate, but it is expected that no potash salts will be ready for the market until late this year. Study following the drilling of a well 4480 feet at Spur, Tex., leads to indications of the presence of a potash-bearing layer about 2200 feet below the surface. Experiments continue in the handling of mineral alumite as a source of potash salts as a fertilizer and as a source of alumina, while the utilization of kelp on the Pacific coast, the recovery of potash salts in the cement industry and the investigation of silicate rocks as a source of potash salts have also occupied greater attention than heretofore.

As a whole, the outlook as to this country ultimately producing the needed supply of potash salts is quite encouraging. Should the desired end be reached, it will be one of the compensations for the material embarrassments that this country has suffered in consequence of the European war.

THE VOICE OF THE PEOPLE.

It remains for the MANUFACTURERS RECORD to say what this country "must do." The Journal is able and strong, with great influence, and a circulation that goes far to make it appear the voice of the whole people.—Jacksonville Times-Union.

The MANUFACTURERS RECORD, the greatest publication of its kind in America.—Baptist Standard, Dallas, Tex.

It is planned to organize the Chisca Manufacturing Co. at Memphis, Tenn., with \$500,000 authorized capital to build a cotton mill. T. R. Winfield, S. B. Anderson and L. D. Falls, all of the Business Men's Club, are the committee in charge.

Sidelights on the Fertilizer Industry

Extraordinary conditions in the fertilizer industry in this country are likely to make of greater importance than at any other like occasion in recent years the annual convention next month at the Hot Springs of Virginia of the National Fertilizer Association. The industry in many respects is one of the most interesting among American manufacturing activities. In 20 years, between 1889 and 1909, a period for which authoritative comparable figures are available, the capital invested in the industry increased from \$40,504,000 to \$121,537,000, or nearly three times; the expenditures for materials from \$25,114,000 to \$69,522,000, and the payments for salaries and wages from \$4,672,000 to \$11,983,000. In the meantime, the value of the products increased from \$39,181,000 to \$103,960,000.

The industry has long been centered in the South, that section making more than two-thirds of the commercial fertilizer of the country, using nearly two-thirds of it and supplying a great part of the native raw materials used in its manufacture. The industry means the assembling of products of agriculture and of mining, or processes connected with the iron and steel industry and of the application of hydro-electrics to the derivation of chemicals from the atmosphere. Of 5,000,000 tons of primary or subsidiary materials consumed annually in the industry, the South supplies 1,549,497 tons

of phosphate rock. Of 1,500,000 tons of cottonseed cake resulting from the annual crush in the South of 4,750,000 tons of cottonseed, about 100,000 tons are used as a source of ammoniates. In the treatment of phosphate rock sulphuric acid is necessary, and this is derived in the South from rock sulphur, from pyrites, and as a by-product of copper smelting. Though Louisiana and Texas produce the bulk of the 312,000 tons of the country's sulphur output, only about 16,000 tons of sulphur are used in making sulphuric acid in a total of 3,330,000 tons of that product for all purposes. Of the total sulphuric acid, 2,748,000 tons are made from domestic and imported pyrites, the imported quantity normally being about twice as great as the domestic, and the South yielding about half of the domestic. The rise of the packing-house industry at several points in the South has brought about a linking of animal and vegetable ammoniates. More than 500 establishments are primarily engaged in the manufacture of fertilizers, and in 1909 those in the South produced 3,670,013 tons, or more than 70 per cent. of the 5,240,164 tons produced in the country. These few figures will serve to indicate the importance of the industry and to suggest the many angles from which it may be viewed. Some of these angles are touched in the following papers prepared by representatives of the industry in the South.

AMERICAN RESOURCEFULNESS TO THE FORE.

By C. A. ALLING, President, Darling & Co., Chicago, Ill.

The opportunity of the fertilizer industry in the present emergency has been to conserve potash, and it has risen to the emergency splendidly.

In the face of the opportunity to increase their sales this spring by furnishing high potash brands, they have steadfastly conserved the potash by not selling brands containing over 3 per cent. potash. With the opportunity to sell potash to the chemical trade at from \$150 to \$175 per ton, they have resisted the temptation and conserved the potash for the farmer.

There will be no shortage of ammoniates or phosphoric acid for 1916, but there will be a decided shortage of potash. The high price of potash will stimulate the production from kelp on the Pacific coast, also the development of potash deposits in the West, but there will still remain a decided shortage.

Fortunately, the German Kali Syndicate through its propaganda has in the past few years so stimulated the use of potash that the sale of high potash brands of fertilizer has increased enormously. Fields where these high potash brands have been used, therefore, can get along very nicely in 1916 with a fertilizer containing

just ammonia and phosphoric acid, and I look for a big sale of this class of goods. Fertilizers, always profitable to the farmer to use, will be doubly so with present market prices of farm products.

The extension of the use of fertilizers in agriculture is inevitable—not from a standpoint of exhausted soil, but from an economic standpoint. Farm lands have advanced so in price that more intensive methods must be practiced to get a fair return on the investment.

There is plant food in the soil to last for thousands of years, but it becomes available slowly, and it is the available or soluble plant food that is in short supply. When you consider that a crop must grow and mature in from 60 to 90 days, you realize the profitability of available plant food as furnished in fertilizer.

With an unlimited supply of phosphate rock in this country, which can be made suitable for plant food by treatment with sulphuric acid, and with an enormous production in this country of animal and mineral ammoniates which would go to waste if not used in the ground, there can be no doubt of the rapid extension of the use of fertilizer in agriculture. To do otherwise would be national suicide.

HOW THE POTASH PROBLEM IS TO BE SOLVED.

By F. B. CARPENTER, Chief Chemist, Virginia-Carolina Chemical Co., Richmond, Va.

Never in the history of the world were commercial fertilizers more needed than at the present time. The primitive methods of farming as practiced hundreds or even thousands of years ago served their purpose, but with our exhausted lands and increased population a different system is required to produce sufficient food, clothing or other necessities to supply the human race under the conditions of modern civilization. Never before has there been such a widespread interest in the results of scientific investigations in agriculture. The results of these investigations have already done much to enlighten the practical agriculturist in methods of tilling the soil, but the most important knowledge which has been gained is that for the production of profitable crops it is necessary to return to the land the plant food which has been removed. This has been reflected in the increased consumption of fertilizers, as is shown by recent census reports. In the year 1900 there were produced in the United States 2,200,000 tons and in 1913 the production had been increased to 6,800,969 tons.

The European war has brought about conditions which have caused temporary embarrassment to manufacturers on account of their inability to obtain potash, one of the essential constituents of complete fertilizers. This can, however, only be temporary. If we are long cut off from the German supply our chemists will soon provide means for obtaining it from the large deposits

of feldspar or other potash-bearing rocks from the beds of kelp on the Pacific coast or from other sources yet to be discovered. "Necessity is the mother of invention," and we may have no fear but the present emergency will be overcome. Our deposits of phosphate rock are sufficient to supply the world for many years to come, and the new processes for obtaining nitrogen from the air will supplement any deficiency in this element.

Ever since the beginning of the war there has been a great deal written and published in the newspapers concerning the potash situation and how it will affect agriculture. Some of the writers have jumped at the conclusion that, if we could not secure potash from Germany, paying crops could not be produced, especially in that section of the country which is largely dependent on commercial fertilizers. Those who are familiar with the agricultural conditions know that such statements are not true. Until such time as normal quantities can be supplied there may be some diminution of crops, but the deficiency can be overcome to a large extent by methods of farming which will liberate the inert potash compounds already in the soil. Potash is much more widely distributed in nature than the other essential fertilizer constituents, and consequently is less needed. Until normal amounts can be secured either from Germany or elsewhere, manufacturers will make the best use of all that can be obtained and further render the farmers every assistance possible in supplying

compounds best suited to their needs under existing conditions. By this means the supply already in the soil will be utilized and good crops still be produced. Potash is just as much needed as ever, but where it has been used liberally in previous years a portion will still remain and by practicing methods of farming which will assist in liberating the insoluble silicates which are present in nearly all soils there will be no very serious diminution of our staple crops for the next year or two on account of the commercial scarcity of this important fertilizer constituent.

The great demand for foodstuffs in the warring nations will stimulate agriculture in this country and thus increase the immediate demand for fertilizers. On account of the more intensive system of agriculture which will be practiced in the future, there will not only be a greater demand in the eastern part of our country, but the large areas of cultivated lands in the West,

which are becoming exhausted of their virgin fertility, must soon supply the deficiencies with commercial plant food. With the system of specialized farming practiced in this country, fertilizers are not only useful, but they are absolutely necessary for the production of profitable crops.

In this land of promise, nothing but progress will satisfy the requirements of the present or future. The changed conditions which have been forced upon us will prove but a blessing in disguise, and the fertilizer industry will expand in the future to an extent never dreamed of in the past. The future has mighty possibilities in store whose achievements will astonish the world, but not the least will be the progress in agriculture. The science of plant feeding and plant production will be developed as never before, and the real function of chemical manures will come to be better understood and their value more fully appreciated.

FERTILIZER MATERIAL AND FERTILIZER USES.

By C. F. BURROUGHS, Vice-President, F. S. Royster Guano Co., Norfolk, Va.

Aside from potash, the United States is independent of the rest of the world for fertilizing materials. While it is true there are large importations of sulphate of ammonia and other nitrogenous manures, these materials are also produced in this country on a very large scale, and there will be sufficient for our requirements. Pyrites ore, from which sulphuric acid is manufactured, is imported very largely from Spain; however, we have large deposits in this country, and, if necessary, the mines could be worked to produce enough to make us independent of the Spanish ores. We practically supply the world with phosphate rock.

The stocks of potash in this country are not sufficient to supply that required for the fall crops, although the percentage of potash used in each ton of manufactured fertilizer has been considerably limited. Unless we see a cessation of hostilities in Europe within the next few months, or Germany will lift the embargo and Great Britain will allow the shipments to come out, our next year's crops will have to be planted without any potash whatever, as the supply from other sources amounts to practically nothing.

The United States Government has done considerable prospecting for potash throughout the West, but so far has met with comparatively little success. The Pacific coast kelp offers the best prospect, and it is generally admitted that there is to be obtained an abundance of potash from this source if a practicable way of securing and preparing the kelp can be found. Up to the present time there has been comparatively little accomplished.

The use of fertilizer under the cotton crop the past season was curtailed at least 40 per cent., owing to the low price of cotton and the indisposition of the planters to buy under existing conditions. It is generally conceded that this shortage in fertilizers will reflect quite perceptibly in the size of this season's cotton crop. Some authorities estimate that it is equivalent to a curtailment in the acreage of at least 20 per cent. in the Atlantic and Gulf States.

With the constant depletion of the natural fertility of the soils as a result of continued cultivation, fertilizer has become an indispensable factor in our agricultural life. Experience during the past 25 years has demonstrated this. About half the fertilizer production of this country is consumed in the States of North Carolina, South Carolina and Georgia. United States Department of Agriculture statistics show that the average yield per acre of cotton has increased substantially in the proportion as the use of fertilizer has increased. Take the last 20 years in those three States as an illustration: North Carolina's cotton yield per acre has during that time increased from 182 to 315 pounds; South Carolina from 170 to 280 pounds, and Georgia from 156 to 240 pounds. North Carolina consumes, in round figures, 900,000 tons of fertilizer, South Carolina slightly over 1,000,000 tons and Georgia more than 1,250,000 tons per annum.

In comparison with this uniform increased production, take the States of Texas and Arkansas, with their newer lands. Texas in 1914 consumed, in round figures, but 77,000 tons of fertilizer within a territory almost as large as the States of North Carolina, South Carolina and Georgia combined, and shows a yield of cotton per acre of 143 pounds, as against 188 pounds 20 years ago. Arkansas in 1914 consumed approxi-

mately 100,000 tons of fertilizer, and reports a yield of cotton per acre of 175 pounds, as against 208 pounds 20 years ago.

With the consistent use of fertilizer, New Hampshire for the year 1912 reports an average yield of 46 bushels of corn per acre, compared with productions of 40 bushels and 43 bushels per acre, respectively, for the States of Illinois and Iowa, two of our principal corn-producing States.

In Aroostock county, Maine, 300 bushels of potatoes to the acre are annually produced, as against 92 bushels in the Middle West. This wonderful production of potatoes is due entirely to the extensive use of fertilizer, there being about 60,000 tons consumed each year in Aroostock county.

That these increased yields in our important crops have been due to the consistent use of fertilizer no one disputes, and if our yields in the future are to keep pace with our requirements, fertilizer will have to be given a more liberal and intelligent use.

HANDLING COAL BY MACHINERY.

Increased facilities for coal handling, have recently been installed for the Taggart Coal Co. at Savannah, Ga., in the shape of a mechanical coal-handling system consisting of two double roller chain corrugated apron type conveyors, receiving run of mine coal from 50-ton hopper-bottom cars and delivering to barges, tugs and dredges.

The conveyors are capable of unloading four 50-ton cars of run of mine coal per hour, and are arranged so



APRON CONVEYOR FOR SOFT COAL AT PLANT OF TAGGART & CO., SAVANNAH, GA.

that it is not necessary to make any shifts after the cars are placed over the hoppers, which was necessary on account of the two side-tracks having only space enough to accommodate eight cars in the yard. The coal is discharged from the cars into four 12x12-foot steel hoppers, which are arranged with reciprocating feeders that control the flow of coal at a uniform feed to the apron conveyors, the conveyors running horizontal and up an incline to a height to discharge the coal to barges by gravity.

Each conveyor is operated by a 15-horse-power electric motor, direct connected, located on towers along docks. Four gratings are placed over the track hoppers to prevent extra large lumps of coal passing to the conveyors, these being broken by the operator dumping the cars.

Previous to the installation of these conveyors this

work was accomplished with two locomotive cranes with grab buckets, but on account of the 100 per cent. increased capacity being necessary and the high cost of operating and repairs necessary to the cranes, the arrangement of conveyors were installed. The complete arrangement was designed, manufactured and installed by the Gifford-Wood Company, Hudson, N. Y., through its new York office, 30 Church street.

FIRST COST IN PAVEMENTS.

The Relation Thereto of Vitrified and Other Bricks.

The Southern Paving Brick Manufacturers' Association was recently formed by a number of leading paving brick manufacturers in the Southern States for the purpose of making the advantages of brick for paving purposes more widely known and appreciated. The headquarters have been established in the Brown-Marx Building, Birmingham, Ala., with John W. Sibley, a man of wide experience in the brick business, as secretary and treasurer. In referring to his work and some general matters regarding brick paving, Mr. Sibley writes the MANUFACTURERS RECORD the following letter:

"Having occasion recently to visit several cities in South Carolina where paving contracts were let for various materials, I was very much gratified to note the excellent condition of the vitrified brick pavements laid in Anderson and Spartanburg some 13 and 17 years ago, respectively, and upon inquiry ascertained that not one dollar of repairs had been necessary since these pavements were laid. As most people look at the first cost of a pavement and are generally biased in favor of the lowest price, it is of utmost importance that the real first cost be ascertained before contracts are awarded. In computing the real first cost of a pavement it is of importance both to the city paving commission, the property-owners and citizens that the price bid be not considered the sole criterion.

"The principal disadvantage that brick labors under in a competitive bidding with most other forms of paving is the seemingly higher first cost. But when a careful analysis is made of all the elements that should be considered in ascertaining the first cost, the excess is more fancied than real. In the first place, the money to pay for the work is obtained upon bonds and certificates of long duration, with consequent semi-annual interest charges.

"If the pavement adopted should wear out long before the maturity of the obligations, it would be manifestly poor economy to select such a type simply to gratify the natural desire to spread the paving over the largest area.

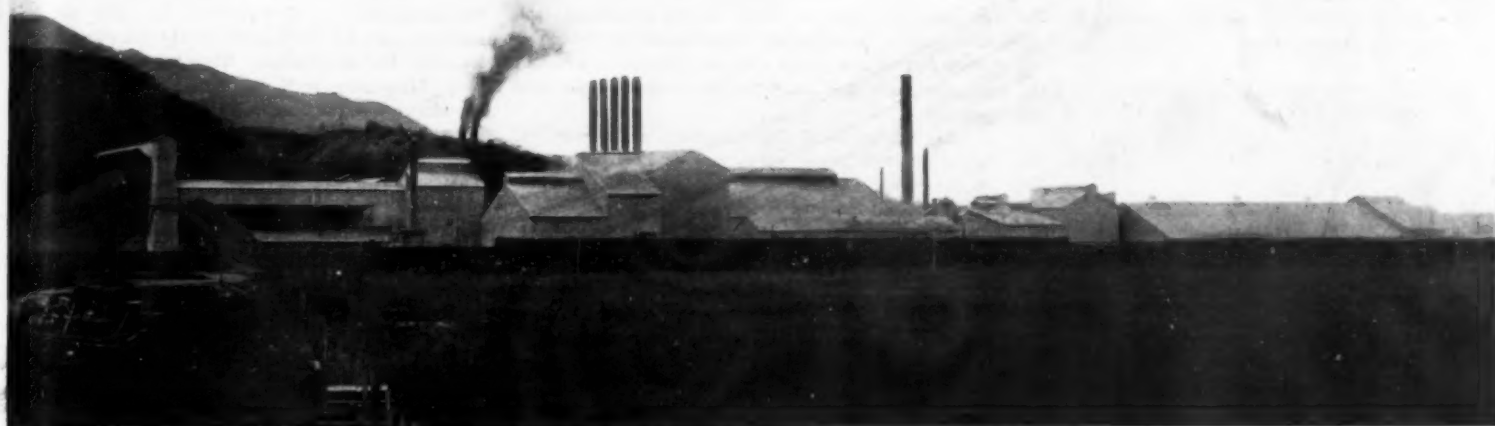
"There are in the city of Montgomery, Ala., pavements of vitrified brick that were laid 20 years ago (but before the cement grout filler came into use), which have been in constant use without any appreciable repairs, and are still in splendid condition. There is a brick pavement in Birmingham, Ala., laid with cement grout filler some 15 years ago that shows practically no wear at all, though subjected to the heaviest kind of traffic. And, of course, in the North there are numerous brick pavements of the same character and eminently satisfactory results.

"As a result of the splendid condition of the brick pavement laid in Anderson, S. C., 13 years ago, that city on May 11 let a contract for some 30,000 square yards of brick paving, and on May 15 the city of Greenville, S. C., awarded contract for some 15,000 square yards of brick paving. Experience is truly the best teacher, and a repeat order after test of many yards traffic is the best evidence of satisfactory service."

Joplin Lead and Zinc.

Last week's turn-in in the Joplin (Mo.) district had a total value of \$895,089, or \$100,000 more than in any other week in the district's history. Zinc blend reached the price of \$135 a ton, against \$41 in the same week of 1914; lead a price of \$72, against \$46, and calamine a price of \$82, against \$23. In the first 24 weeks of this year the turn-in of ores in the district had a value of \$9,927,887, against \$5,650,739 in the same period of 1914.

Clinchfield Portland Cement Corporation Doubling Its Plant



GENERAL VIEW CLINCHFIELD PORTLAND CEMENT PLANT, INCLUDING RECENT IMPROVEMENTS.

[Special Correspondence Manufacturers Record.]

Kingsport, Tenn., June 12.

A striking instance of the success of a Southern manufacturing industry started four years ago, as well as the faith of its officials in the future demand for its products, are reflected in the work now under way, doubling the capacity of the plant of the Clinchfield Portland Cement Corporation, Kingsport, Tenn., and the increase of its capital stock from \$1,500,000 to \$2,000,000 to take care of this expansion.

This plant was built with an initial capacity of 2500 barrels per day, so that the increase will give it 5000 barrels daily, and this added output is expected to be ready for the market by the spring of 1916.

This was one of the big industries that was established along the line of the Carolina, Clinchfield & Ohio Railway in Eastern Tennessee a few years after this railroad opened up this undeveloped territory, which contains such a wide variety of mineral, timber, agricultural, water-power and other resources. Marked success has followed the operation of the plant and the marketing of Clinchfield Portland, which has been due not only to the high quality of material made, but also to the good shipping facilities the Clinchfield Railway provides into very active sections of the South. Direct shipments are available over the Appalachian Mountains into the Carolinas, where connections are made with the leading Southern railroads, enabling Clinchfield cement to be placed in the important markets of the Southeast. At Johnson City, Tenn., connection is also made with the Southern Railway, which gives north and south distribution in this territory, and farther up

on the Northern end connection is also made with the Norfolk & Western and Louisville & Nashville, thus enabling the company to handle cement orders over a wide area. Just recently the Carolina, Clinchfield & Ohio Railway completed its northern extension to Elkhorn, Ky., where direct connection is made with the Chesapeake & Ohio, giving a direct route to Cincinnati and Southern Ohio points, including Kentucky and Western West Virginia. A branch sales office was recently established at 1305 Union Trust Building, Cincinnati, O., in charge of Morris M. Hunter, formerly with the Edison Portland Cement Co., in order to develop and broaden the demand for Clinchfield cement in this new market.

Incidentally, the company's business in the Carolinas grew so steadily in recent years that a branch sales office in this district was opened last year at 908 Commercial Bank Building, Charlotte, N. C., in charge of John A. Hudson. In addition to these offices, the sales department also has traveling representatives covering other parts of its territory. All of these selling departments report direct to W. E. Law, the sales manager of the company, who has his headquarters at the plant at Kingsport, Tenn. The successful marketing of Clinchfield cement has been due in a large measure to the efficient selling organization which Mr. Law has developed, and by having his own office at the plant he is able to give his direct personal attention to orders that are received and see that they are handled with facility.

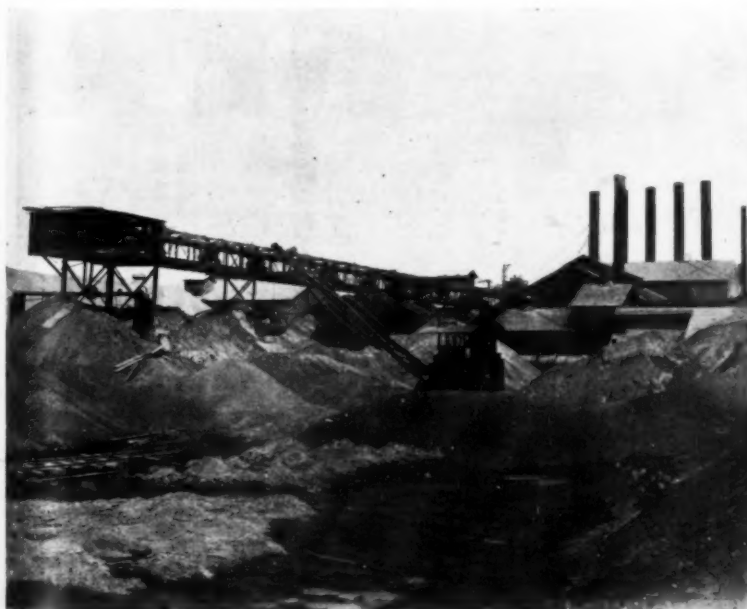
John A. Miller, the president of the company, actively directs its affairs. He is a man of wide experience in

the manufacture of Portland cement, having for many years been vice-president of the Dexter Portland Cement Company of Nazareth, Pa., and in recent years the president of that company. When the Clinchfield plant was established at Kingsport under his direction, his knowledge of cement manufacture enabled him to gather about him men of wide experience and knowledge of the business, and the efficient organization established and conducted under his administration has proven an influential factor in the success the company has achieved. Other officers of the company include H. R. Dennis, vice-president, New York city; W. M. Bennett, second vice-president and treasurer, Kingsport, Tenn., and E. G. Woodling, secretary, New York city.

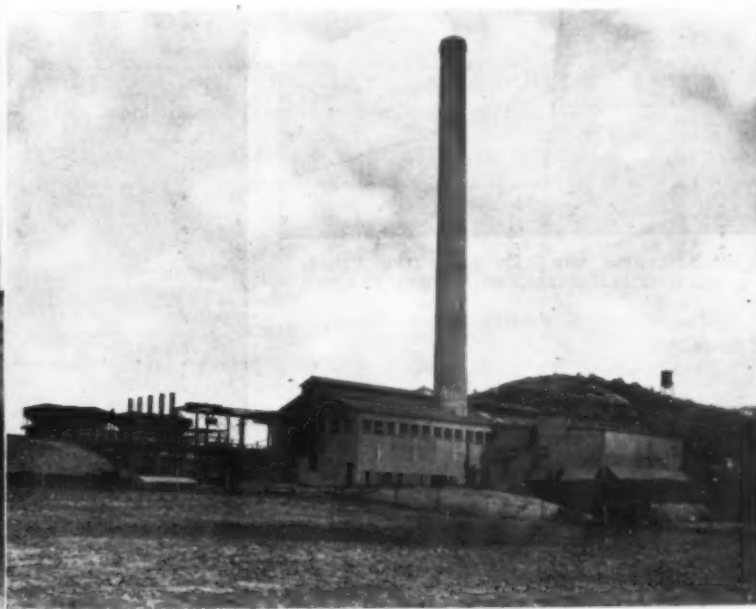
When the original plant was built this was so designed and laid out to allow extensions to be made when they would be needed; consequently, the construction work necessary to provide the additional output only requires the building of certain foundations and adding units to the different parts of the plant.

The accompanying illustrations give some good ideas of the plant as it looks today, and also show the new power-house, the clinker storage yard, the foundation walls of the new stockhouse and some of the foundations for the new finishing mill. As will be noted, this construction work is substantial in every character. The big stack for the power-house is of reinforced concrete construction, and is 207 feet high. The following list covers the principal equipment that is being installed to provide for the increased capacity:

Three No. 6 Universal mills and one No. 3 Vulcanite



CLINKER STORAGE, CLINCHFIELD PORTLAND CEMENT PLANT.



NEW POWER-HOUSE, SHOWING 200-FOOT REINFORCED CONCRETE STACK,

mill, Williams Patent Crusher & Pulverizer Co., Chicago, Ill.

Six 7x22 mills, Bethlehem Foundry & Machine Co., South Bethlehem, Pa.

Two 8x125 rotary kilns, Allis-Chalmers Company, Milwaukee, Wis.

Five No. 2 Duplex Sturtevant ring-roll mills, Sturtevant Mill Co., Boston, Mass.

Three Giant Griffin mills for the coalhouse, Bradley Pulverizer Co., Boston, Mass.



REINFORCED CONCRETE WALLS AND FOUNDATIONS FOR NEW STOCKHOUSE, CLINCHFIELD PORTLAND CEMENT PLANT.

One rotary cooler, two rotary dryers, W. F. Mosser & Son, Allentown, Pa.

Fifteen-ton locomotive crane, Browning Company, Cleveland, O.

One-hundred-ton railroad track scales, Standard Scale & Supply Co., Pittsburgh, Pa.

Stone-handling and elevating machinery for stone storage, Stephens-Adamson Manufacturing Co., Aurora, Ill.

Structural steel for building purposes, Belmont Iron Works, Philadelphia, Pa.

Structural steel, boiler-house, Virginia Bridge & Iron Co., Roanoke, Va.

Excavation and concrete work, Oliver & Hill, Maryville, Tenn.

All electrical machinery, including one 2500-kilowatt alternating-current generator, General Electric Co., Schenectady, N. Y.

Four 350-horse-power boilers, Heine Safety Boiler Co., St. Louis, Mo.

Eight stokers, Detroit Stoker Co., Detroit, Mich.

Coal and ash-handling equipment, Shepherd Electric Crane & Hoist Co., Montour Falls, N. Y.



FOUNDATIONS FOR NEW FINISHING MILLS, CLINCHFIELD PORTLAND CEMENT PLANT.

Reinforced concrete chimney, Weber Chimney Co., Chicago, Ill.

Boiler-feed pumps, Hy. R. Worthington, New York city.

2500-horse-power feed-water heater, Harrison Safety Boiler Works, Philadelphia, Pa.

50,000-gallon steel tank for fire protection, R. D. Cole Manufacturing Co., Newnan, Ga.

1500-gallon Underwriter fire pump, Deane Steam Pump Co., New York city.

300-gallon deep-well pump, Goulds Manufacturing Co., Seneca Falls, N. Y.

High-pressure steam piping, Walworth Manufacturing Co., Boston, Mass.

The enlargement of the plant comes under the super-

vision of the company's general superintendent, L. L. Griffiths. Such machinery that had been tested for efficiency or found to best suit the new installation was purchased, thereby balancing the mill, with the assurance from experience that the new installations being made will prove economical and successful in the manufacture of Clinchfield Portland cement.

The company has also recently constructed a number of splendid houses for those officials who make their headquarters at the plant. These houses are modern in every feature and design and construction, and contain all appliances that make for the comfort of the occupants.

The completion of the extensions under way will make this the largest plant making Portland cement in the South, and great credit is due those who have developed this industry in four years to its present successful operation. It is a striking illustration of what can be accomplished through proper financing and a well-directed efficient organization.

FISHING CREEK HYDRO-ELECTRIC.

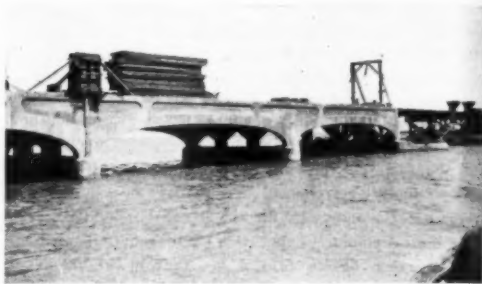
To Develop 30,000 to 50,000 Horse-Power in North Carolina.

Referring to the latest water-power development of the Southern Power Co. of Charlotte, the Hardaway Contracting Co., B. H. Hardaway, president, Columbus, Ga., which has the construction contract, writes to the MANUFACTURERS RECORD as follows:

"The Fishing Creek development, located near Nitrolee, S. C., on the Seaboard Air Line Railway, is now under construction and will be constructed across the Catawba River. It will be about 1200 feet in length and about 60 feet high. While the details of the power-house have not yet been completed, it is probable that three electric units of the vertical type will be installed, which will develop from 30,000 to 50,000 horse-power.

"The contractor will place an equipment on the work, consisting of one No. 21 crusher, two No. 8 crushers and two No. 5 crushers, and two two-yard cube mixers. The output of this plant is expected to run from 800 to 1500 yards of concrete per day. About 600 or 700 laborers will be employed on the work, which is to be

completed by midsummer of 1916. Two steam shovels will be used in the quarry, and eight or ten locomotives, with an accompaniment of side-dump cars and standard flat cars, will be used. About 20 derricks, with 40-horse-power engines and 115-foot masts and 100-foot booms, will be used. The side-dump cars used will be those manufactured by the Western Wheeled Scraper Co. of Aurora, Ill., and by the Kilbourne & Jacobs Manufacturing Co. of Columbus, O. The standard steel flat cars are those made by the American Car & Foundry Co. of Chicago. The Allis-Chalmers Company, Milwaukee, is the manufacturer of the crusher machinery, and the Municipal Engineering & Contracting Co. of Chicago is the maker of the mixing machinery. American and Baldwin locomotives are used. The contractor will use electric-driven air compressors of direct type, manufactured by the Ingersoll-Rand Company of New York. Also Ingersoll-Rand air-driven drills and Loomis well drills will be used. The hoisting engines are especially made for the Hardaway Contracting Co. by the Lidgerwood Manufacturing Co. of New York, and the derricks are 25-ton American Hoist & Derrick Co. of St. Paul, manufactured especially for the Hardaway Contracting Co."



CORPUS CHRISTI CAUSEWAY.

Construction of the Corpus Christi Causeway, of which Bartlett & Ranney of San Antonio, Tex., are consulting engineers, is progressing. One-half the concrete bridging shown in the accompanying illustration is completed and the dredge has started work on the fill. Included in the project is a 442-foot drawspan.

RECLAIMING WET LANDS IN LOUISIANA.



Louisiana has for many years been demonstrating the tremendous economic advantage in reclaiming by drainage the highly productive wet lands of the South. A number of projects of the kind in that State have been pioneer and have availed themselves of the very latest facilities for the task. Among them and notable is that at Raceland. The accompanying illustration, showing two 120-horse-power two-cycle engines built by the International Steam Pump Co. of New York city, direct connected to centrifugal drainage pump, indicates the scope of the undertaking at that place.

Prudential Oil Corporation's Refinery Nearing Completion



CONSTRUCTING BIG DOCK AND DREDGING CHANNEL AT PRUDENTIAL OIL REFINERY.



LARGE STEEL TANKS FOR STORING CRUDE OIL FROM TANK STEAMERS AT PRUDENTIAL OIL REFINERY.

Hundreds of mechanics and laborers are busily engaged in pushing rapidly to completion the big oil refinery of the Prudential Oil Corporation, located on the lower harbor of Baltimore. Over \$1,500,000 is being expended for the initial units that will be installed to refine all of the products obtained from crude oil, and it is expected that the plant will be ready for operation by July. This new entry into the oil refining field has strong financial backing, being financed largely by the Anthony N. Brady Estate and associates, representing millions of dollars of capital, with headquarters in New York city.

In establishing this industry, those behind it have gathered together experts of national reputation in all branches of the oil refining industry, and ample funds have been provided to build a plant that will embody the most modern ideas and equipment for that branch of the business.

The plant covers about 100 acres of land, and it has been so laid out that additional units can be added from time to time as the demand necessitates. A number of new features have been incorporated in the design and arrangement of the plant and departures have been made from some of the older methods usually employed. Prominently among such departures is the type of plant for making asphalt products. This will be a separate, self-contained unit, enabling the company to specialize in such products without influencing any of the other products to be made in other departments. Thus, in refining any class of products, the quality of no one of these will be sacrificed to produce any other.

This refinery will be complete in every department, and all of the varied products made from crude oil will be manufactured here. In addition, there will be established all of the auxiliary departments that are needed in a self-contained plant to enable it to be operated with facility and to be self-dependent in regard to repairs and maintenance and the preparation and packing of its products for the market.

Baltimore was selected for the location of this big industry because of the complete and splendid advantages this city contains for such an industry. The crude material will come from Mexico in tank steamers of the largest capacity, and it is stated that none of these steamers have a cargo capacity of less than 100,000 barrels.

The plant is located just off the main channel entering the lower harbor of Baltimore. The company has dredged a 35-foot channel leading from the main one to the big dock that has been built. This dock is 400 feet wide and 800 feet long, and will accommodate a number of large tank steamers and be equipped with pipe lines and pumps to unload the crude oil direct from the tank steamers to the big receiving tanks located nearby.

An accompanying illustration gives a splendid view of the lower end of this big dock and shows large dredges at work deepening the channel and filling in the dock.

Upon receipt the crude oil is stored in a number of large receiving tanks, which are also illustrated. These tanks will provide sufficient reserve storage to keep the plant well supplied with raw material at all times. At present six of them will be established, but ample room has been allowed to add others as the capacity of the plant is increased.

Another illustration shows some of the stills under construction. Here the crude oil will be separated and the various distillates run into tanks located behind the stills. The large power-house shown in the same illustration will contain all of the mechanical equipment necessary to provide for operating the equipment of the plant, and pumps for transferring the crude oil and distillates from one department to another.

Scattered here and there are a large number of tanks of different sizes used in various processes of manufacture and for storing the products when finished. Each of the different departments will have complete facilities for packing its products ready for the market. A large cooperage plant is to be installed for making both wooden and metal barrels of various sizes. For the shipment of its products in larger volume the company is having made especially designed steel tank cars, which are being built by the American Car & Foundry Co. of St. Louis. There will be 200 of such cars, having capacities ranging from 4000 to 10,000 gallons.

An interesting feature in connection with the establishment of this plant is the miniature refinery that has been in operation for some months, in order to thoroughly experiment in advance with the crude products and to guide the designing engineers



SHOWING STILL, POWER-HOUSE, TANKS, ETC., UNDER CONSTRUCTION AT PRUDENTIAL OIL REFINERY.



TANKS FOR VARIOUS DEPARTMENTS FOR REFINING AND STORAGE PURPOSES AT PRUDENTIAL OIL REFINERY.

and chief chemists in the construction of the different departments. This miniature experimental plant was equipped to refine in one-barrel lots all of the various distillates just as completely as a large thousand-barrel still. The results obtained enabled the company to ascertain in advance the exact grade of the various products to be turned out by the plant and to form a definite idea of the quality and quantity of different products that can be secured from their crude material.

The plant is splendidly located for shipping purposes, both by rail and water. The tracks of the Baltimore & Ohio Railroad extend into the plant, and as it is located within the free lighterage district, a direct connection can be made by barge to both the Pennsylvania and Western Maryland railroads. Being on the water, of course, gives the company all the desired facilities for coastwise and foreign shipment.

Among the various firms which received contracts for the more important construction work, materials and equipment needed in the plant are the following: Bartlett-Hayward Company, Maryland Dredging Co., Andrew Miller Company, Novelty Steam Boiler Co., the Crane Company, all of Baltimore; International Steam Pump Co., New York city; Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.; Lukens Iron & Steel Co., Coatesville, Pa.; Carnegie Steel Co., Pittsburgh, Pa.; the American Car & Foundry Co. of St. Louis.

The design and construction of the plant have been in charge of the company's construction engineer, J. O. Jensen, who has had broad experience in building oil refineries in all parts of the country.

GULF STATES STEEL CO.

Profits Described in Annual Report—Many Improvements Proposed.

The first annual report of the Gulf States Steel Co., Birmingham, Ala., which covers the calendar year 1914, has been issued, and President James Bowron says that the net earnings were \$115,623.68. Furthermore, he says that since the receivership of the Southern Iron & Steel Co., the former corporation, the property has yielded other profits thus: For the six months of receivership from August 1, 1912, to January 31, 1913, \$54,389.53; for 10 months under the Standard Steel Co. (which was a temporary holding company), and one month under the Gulf States Steel Co., this completing the year 1913, \$163,381.85, and making the total since the beginning of the receivership \$279,005.53, although the works were run on half-time in October, November and December last on account of the war's interference with business. These figures, it is stated, have been certified by public accountants, as has the balance-sheet of December 31, 1914, which shows assets of \$8,752,971.13, this including works and property based on stock purchase and plus additional expenditures since and less reserve pending disposition of treasury stock, at \$7,468,199.25. The capital stock is \$7,651,377.36 issued out of a total of \$15,500,000, this consisting of \$3,000,000 first preferred, of which \$1,260,000 is issued; \$5,000,000 second preferred, of which \$3,107,000.38 is issued, and \$7,500,000 common, of which \$3,284,307.98 is issued. The bonds are \$280,000 of the Self-Fluxing Ore Co. The surplus is \$276,005.53.

The properties of the company are at Alabama City and Virginia Mines, Ala. President Bowron says that the most urgent demand for expenditure at the steel works is for the addition of automatic stokers to the rod mill boilers. An outlay of \$60,000 for this would save, it is estimated, \$18,000 per year in fuel and labor. He also suggests the expenditure of \$25,000 to complete works at the back of the rod mill to make hoops, bands and cotton ties, having in view an estimated profit on such output of \$10,000 per annum. Furthermore, he advises warehouse construction which would afford accommodation for galvanized barbed wire and woven wire fence under roof, they being now stored in the open air. This, he says, it is reasonable to believe would result in better prices obtained sufficient to pay the interest on the investment in two warehouses to cost \$32,000. He also suggests the erection of a steel building to replace the present machine shop, which is a wooden building, "small, dark and crude." This would cost \$30,000, including some additional tools required, and it would result in economies in making re-

pairs to machinery, locomotives, etc. The expenditure of \$40,000 to \$50,000 in other ways, it is also said, would increase the working capacity of the open-hearth plant and the blooming mill.

The report describes improvements which have been made, but it says that an expenditure of \$200,000 must be provided for, according to the construction program, for permanent machinery at the mines for hoisting, pumping and ventilating, together with houses, crushers, shops, tracks, etc.

NEW SCHOOL BUILDING AT KEY WEST.

At the suggestion of Virgil S. Lowe, superintendent of schools of Monroe county, Florida, the Board of School Commissioners of the county planned last year the erection of an additional school building to meet the growing needs of the eastern part of Key West. The new building illustrated herewith cost approximately \$31,000.



Rapid Cutting of Hardwood Timber Around Baltimore.

The amount of native forests around Baltimore, especially of chestnut and oak, has generally attracted the attention of all visitors from other sections. Many of the large estates around the city have kept intact beautiful forest tracts, some of a few acres and some of many. Unfortunately for the beauty of the surrounding country, however, a change is taking place, and much of this timber is now being rapidly cut. This is especially true of chestnut. Owing to the blight affecting chestnut trees throughout the country, a large proportion of the chestnut timber around the city is now being cut for railroad ties. This has also stimulated the cutting of other hardwoods, including oak and walnut. There is an active demand for walnut, and buyers are hunting all over this section for walnut trees. A Baltimore county farmer was recently offered \$200 for four walnut trees on his property. It is reported that the walnut is being shipped to Germany; at least, that is the statement that is passed around from the buyers to the sellers of this walnut timber.

One cannot motor around Baltimore anywhere within a radius of 5 to 25 miles without being impressed with the number of small sawmills that have recently been put into operation cutting out these beautiful tracts of chestnut, oak and other hardwoods, which have been such an addition to the attractions of the country surrounding this city.

Building a New Town.

[Special Correspondence Manufacturers Record.]

Lakeland, Fla., June 12.

A town will soon take the place of a wilderness at a point six miles east of Lakeland. The new burg will bear the name of "Ita-Helena," and almost the entire population will be Americanized Italians. The promoters are Sidney E. Turnbull of Johnstown, N. Y., president; N. H. Rutherford of St. Catharine, Ontario, vice-president; Mrs. Helen Smith of South Carolina, secretary and treasurer, and John Malcolmson of St. Catharine, general manager. Contracts have already been let to the Lakeland Lumber Co. for material to build 100 houses. Among these buildings will be homes for the settlers, store buildings, a church and school buildings. It is estimated that the population of the new town will be from 500 to 600 at once. The settlers will have small tracts, which they will convert into truck farms. All modern improvements will be used in building the town, and the buildings will be of a substantial nature, neat and comfortable.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Austin, Tex.—City voted \$425,000 bonds to improve streets.

Chesterfield, S. C.—Chesterfield county, Jefferson township, voted \$25,000 bonds to construct roads.

Charleston, W. Va.—Kanawha county, six magisterial districts, voted \$375,000 bonds for road construction.

De Land, Fla.—Volusia county, Daytona Special Road and Bridge District, voted \$400,000 bonds to construct 50 miles of road.

Dobson, N. C.—Surry county, Dobson township, voted \$30,000 bonds to construct roads.

Meridian, Miss.—Lauderdale county voted \$50,000 bonds to connect improved roads in county with paved streets in city.

West Point, Miss.—Clay county, District No. 2, issued \$20,000 for road construction.

Bonds to Be Voted.

Bradentown, Fla.—City votes in July on \$9000 bonds to grade streets.

Bradentown, Fla.—Manatee County Parish Road and Bridge District votes July 19 on \$110,000 bonds for road improvements, etc.

De Land, Fla.—Volusia county, De Land District, votes July 13 on \$350,000 bonds for road construction.

De Land, Fla.—Volusia county, Orange City District, votes July 13 on \$90,000 bonds to construct roads.

Elizabethton, Tenn.—Carter county votes July 5 on \$360,000 bonds to construct roads.

Gastonia, N. C.—Gaston county votes August 3 on \$150,000 bonds for road construction, etc.

Orange, Tex.—City votes July 20 on \$325,000 bonds for street improvements, etc.

Sweetwater, Tenn.—City votes July 22 on \$15,000 bonds for street improvements.

Pineville, W. Va.—Wyoming county votes June 28 on \$550,000 bonds to construct roads.

Contracts Awarded.

Baltimore, Md.—City awarded \$53,790 paving contract.

Chattanooga, Tenn.—Lookout Mountain Pike Commission awarded contract to construct Wauhatchie pike; 2.13 miles; \$150,000 available.

Huntsville, Ala.—Madison county awarded \$11,500 contract to construct model State highway.

Knoxville, Tenn.—City awarded paving contracts totaling \$111,005.44.

Lake Charles, La.—Calcasieu parish awarded \$17,000 contract to construct road.

Tavares, Fla.—Lake county awarded contract to construct 30 miles of sand-asphalt road, using Aztec natural asphalt.

Vicksburg, Miss.—City awarded contract to construct one mile of concrete sidewalks.

Contracts to Be Awarded.

Baltimore, Md.—City receives bids until June 23 for 10,950 square yards of street paving.

Dallas, Tex.—Southern Methodist University will construct grading on campus to cost \$5000; walks, \$2000; paving, \$56,000.

Hazlehurst, Miss.—Copiah county, District 5, opens bids July 5 to construct gravel roads; \$150,000 available.

La Grange, Ky.—Oldham county receives bids until June 25 to construct 4.6 miles of road.

Moundville, W. Va.—Marshall county will grade and macadamize Fairmont pike in Union District as far as \$50,000 will complete same.

Florida's Road Department.

Governor Park Trammell of Florida has signed the act of the Legislature, effective October 1, 1915, creating a State road department. The department, which will have headquarters at Tallahassee, will consist of five members appointed by the Governor, one from the State at large and one from each of the Congressional districts. The department is to select a competent person as State Road Commissioner. The department is to collect for the free use of county commissioners and the public all practicable information as to the best methods and materials for building and repairing roads, and is to point out to county commissioners whenever discovered defects in methods or materials in road work. Wherever county commissioners shall request advice and assistance of the department it shall send the State Road Commissioner or assistant into the county to render all possible assistance and no expense to the county save that incurred in traveling. For the maintenance of the department 15 per cent. of the amount of all county licenses collected upon automobiles, automobile trucks and other motor-driven vehicles shall be set aside. For 12 years the Florida State Good Roads Association has been working for the creation of such a department. Referring to the recent act, Secretary J. P. Clarkson of the association, writing to the MANUFACTURERS RECORD from Tallahassee, says:

"While not very much authority is given the department, you will observe that it authorizes and empowers the department to employ a State Road Commissioner, at a salary to be fixed by the department. That was one of our biggest fights. The Governor and various members wanted to fix the salary at about \$2000, but we would not agree to it. We want the best man that can be obtained, and we are going to have him. We believe that he should be paid a salary commensurate with his ability, and we know that such a man as we desire cannot be obtained for \$2000 a year. We will endeavor to have the newly-created department request the United States Office of Public Roads to assign one of its chief engineers to Florida, his salary to be paid by the State Road Department. The provision for raising funds is ample for the present. It will give the department about \$20,000 to \$25,000 a year, and as its authority is only to act in an advisory capacity, and to secure and compile data and assist the counties by advice only, that sum should be sufficient until the next Legislature, when we will ask for an enlargement of the powers of the department and endeavor to begin some real road improvement. Florida needs a connected system of highways, and we will never cease our work until such a system is obtained."

\$100,000 Road Contract.

Contract for constructing the Wauhatchie pike has been awarded by the Lookout Mountain Pike Commission, H. F. Lawrence, chairman, Chattanooga, Tenn. It amounts to \$100,795.97, and calls for concrete construction 2.13 miles long and 20 feet wide, including culverts, walls, etc. This road will begin at St. Elmo avenue at Chattanooga and extend across Lookout Mountain to the bridge across Lookout Creek.

For Florida's West Coast.

The Central Florida Highway Association, which plans a highway down the west coast of Florida, was organized last week at Orlando with T. Edward Bryan of Tampa, president; M. M. Smith of Orlando, G. G. Ware of Leesburg and H. Clay Stanford of Kissimmee, vice-presidents; L. P. Dickie of Tampa, secretary, and E. W. Elliott of Palatka, treasurer. The association endorsed the scenic highway route, almost an air line between Jacksonville and Tampa, and the completion of the Paradise Loop, which will go through Tallahassee and Taylor county to Gainesville; thence to the west coast of Florida to St. Petersburg, over to Tampa, south through the Riverview section to Manatee, to Braden-

town, to Sarasota, to Arcadia; then following the Dixie Highway through Orlando to Sanford, to De Land, Green Cove Springs and Jacksonville.

Contract for 30-Mile Road.

A sand-asphalt road 30 miles long has been contracted for by the commissioners of Lake county, offices at Tavares, Fla. This highway will be built by the Continental Public Works Co., New York, in 175 working days, the contract having been awarded to that corporation. The J. B. McCrary Company, engineer, Atlanta, and Geo. L. Watson, general manager of the Continental corporation, will be in charge of the work.

New Orleans to Expend \$1,500,000.

Approximately \$1,500,000 will be the cost of street paving and accompanying improvements which the municipal officials of New Orleans are planning. It is expected that this construction will be contracted for during 1915, and that work will be begun next January. The city engineering department is now giving attention to the plans and specifications with a view to making further announcements in the near future.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

RUMORS OF A RAILROAD.

Buchanan County, Virginia, Mines Said to Be the Objective of Unknown Promoters.

Recent reports from Roanoke, Va., and Bluefield, W. Va., said that steps were being taken with a view toward building a railroad from Princeton, W. Va., or a point near there southwest into Buchanan county, Virginia, about 60 or 70 miles, for the development of new coal mines. One of the reports went so far as to say that W. W. Boxley & Co., railroad contractors, of Roanoke, were already engaged upon the construction of a line somewhere in Buchanan county. In relation to this latter the firm writes the MANUFACTURERS RECORD thus:

"Beg to advise that this was an erroneous report, as we have not secured any work in Buchanan county, nor do we know anything about any work being done in that county."

At present Buchanan county, which is in the southwestern part of Virginia, has only one railroad, a narrow-gauge lumber line known as the Big Sandy & Cumberland, which starts at Devon, postoffice Okeefe, in Mingo county, West Virginia, crosses a corner of Pike county, Kentucky, and thence enters Buchanan county. Several years ago the Chesapeake & Ohio interests obtained a charter in Kentucky for the construction of a line from its Big Sandy division in Kentucky up the Levisa Fork of Big Sandy River into that county as far as Grundy, the county-seat, but the extension was never built.

Cherry River & Southern.

The Cherry River & Southern Railway Co., formed some time ago in West Virginia, has, according to a report from Weston, in that State, instituted condemnation proceedings to obtain right of way through lands of the Gauley Coal & Land Co. for 23 miles. The proposed road will be 42 miles long from Curtin to the mouth of Cherry River. Curtin is on the Baltimore & Ohio Railroad, and the route is thence to Brooks Bridge, two miles from Summersville, on to Hominy Creek, to Mouse Creek, to Angling Creek and its mouth, and up Greenbrier River to near Bays Ferry, etc. The interested parties are George B. Curtin and H. B. Curtin of Curtin, Peter Carroll, George McClintic and H. L. Kirtley of Charleston, W. Va.; A. Bumgardner of Columbus, O., and S. W. Richey of Cincinnati, O.

\$4,500,000 WORTH OF RAILS.

Pennsylvania Awards Large Contracts—Other Equipment Orders.

Pennsylvania Railroad Co. has ordered rails thus: Carnegie Steel Co., Pittsburgh, 69,700 tons; Cambria Steel Co., Johnstown, Pa., 34,850 tons; Pennsylvania Steel Co., Steelton, Pa., 34,850 tons; Bethlehem Steel Co., South Bethlehem, Pa., 8050 tons; Lackawanna Steel Co., Buffalo, N. Y., 8050 tons. The contract to the Pennsylvania Steel Co. will, it is said, be rolled at the Maryland Steel Co.'s plant, Sparrows Point, Md. There will be altogether 118,000 tons of 100-pound rails and 37,500 tons of 125-pound rails. It is estimated that the entire value of the contracts is about \$4,500,000.

Carolina Power & Light Co., Raleigh, N. C., will soon receive three combination cars, which are being built by the Southern Car Co., High Point, N. C.

Chicago, Rock Island & Pacific Railway receivers will, according to a report from Chicago, ask the court to authorize them to purchase 4000 freight cars.

St. Louis & San Francisco Railroad receivers have been authorized to purchase 27,000 tons of 90-pound rails. Estimated cost about \$800,000.

Baltimore's Harbor Belt Line.

The city of Baltimore is completing another section of its water-front belt-line railroad. Some time ago it completed a short section of a few blocks between Light and Montgomery streets along Key Highway, which is a new thoroughfare on the southern side of the main harbor, and now it is continuing this section from Montgomery to Lawrence street, where connection will be made with the Baltimore & Ohio Railroad's track to Locust Point. This will cover the first section of Key Highway. When this is done there will be about one mile of track finished. But it is planned to continue the line a mile farther to Fort McHenry, where a detention station for immigrants is to be built by the Federal Government, and then it is to round the point on which the fort stands and proceed westward, skirting the northern shore of the Middle Branch of the Patapsco River for about a mile to a connection with the Western Maryland Railway at Port Covington. The city plans to build in connection with its railroad several piers on the Middle Branch, and there will also be warehouses erected.

Traction Merger at Parkersburg.

The Kanawha Traction & Electric Co. of Parkersburg, W. Va., has succeeded the Parkersburg, Marietta & Interurban Railway Co. The new company was recently chartered, and the consolidation of interests was practically a change of name. The company is making several improvements, including the erection of a generating plant to cost about \$500,000. The directors are S. D. Camden, C. C. Martin, W. W. Van Winkle, F. E. Davidson, Thomas Logan, J. A. Wetherell, Joseph Stern and M. R. Lowther of Parkersburg, W. W. Mills, D. B. Torpey and W. H. H. Jett of Marietta, O., and J. N. Camden of Versailles, Ky. Mr. Camden is president; Messrs. Mills and Martin, vice-presidents; Mr. Van Winkle, secretary, and J. N. Tubb, treasurer. H. H. Archer is general manager.

The new financing of the company includes the issue of \$1,100,000 of 5 per cent. two-year notes through the Fidelity Trust Co. of Baltimore. The total capitalization of the new company will be \$3,000,000.

A Tennessee Interurban Railway.

A new interurban railway plan has been chartered at Nashville, Tenn. It is the Nashville, Springfield & Northern Railway Co., with the nominal capital of \$10,000, but this, it is said, will be used for the survey. The proposed railroad will be between 80 and 90 miles long from Nashville to Springfield and Clarksville, Tenn., and Franklin, Ky. It is expected that engineers will soon be in the field to decide upon a route. E. G. Stribling of Nashville is president; W. B. Myers of Goodlettsville, Tenn., vice-president; Robert C. Leonard or Nashville, secretary and treasurer. James B. McKee

and John H. Richards of Springfield complete the list of incorporators. Mr. Leonard is said to be connected with the Nashville Railway & Light Co.

For Industries and Agriculture.

The Pennsylvania Railroad system has issued two interesting folders abounding in information which may be of considerable value to individuals or corporations. One is entitled "The Logical Situation for Industries," and the other, "The Central West—America's Richest Field for Manufacturing and Agriculture." It is said that the manufacturer contemplating a new plant or a change in location cannot fail of the logical conclusion that an ideal location is to be found on these lines. Attention is especially directed to the great natural resources and the extensive development of the sections traversed by the railroad, as well as to their transportation facilities.

Railroad Notes.

A report from Alexandria, La., says that the city has purchased and will operate the property of the street-railway company there. Several new cars will be obtained and the power plant improved.

The Cincinnati, New Orleans & Texas Pacific Railway has just put in use 5.3 miles of second main line track between Glen Mary and Huffman, Tenn., which makes a total of 126 miles of double track on this road between Cincinnati and Chattanooga.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

Southern Textile Exposition.

J. H. Spencer, chairman of the machinery and supply committee of the Southern Textile Association, of which E. E. Bowen of Greer, S. C., is president, writes from Greenville, S. C., that the committee in charge of the Southern Textile Exposition, to be held at Greenville in conjunction with the convention of the Southern Textile Association, November 4-6, that the committee is now making final plans for the assignment of floor space and other details. He adds:

"The exposition will be in the center of the Southern textile industry, there being 2,500,000 spindles within a radius of 40 miles of Greenville, 7,000,000 spindles within 100 miles and 9,600,000 spindles within 24 miles; this will result in a large proportion of the attendance being practical mill men, and the committee, therefore, hopes to have a large exhibition of specialties, novelties and new devices pertaining to the industry. We believe this data will appeal to all progressive manufacturers and builders."

The Southern Textile Association will hold its annual meeting at Asheville June 25-26. Among the speakers will be Ellison A. Smyth, president of the Pelzer Manufacturing Co.; C. W. McSwain of Clemson College, S. C.; H. P. Meikleham of the Massachusetts Mill in Georgia, of Lindale, Ga.; T. H. Rennie, president of the Pell City (Ala.) Cotton Mills; E. M. Holiday and Joseph E. Brendle of the Lowe Manufacturing Co., Huntsville, Ala.

Reorganization Plans Announced.

The creditors' committee of the Aiken Manufacturing Co., Bath, S. C.; the Seminole Manufacturing Co., Clearwater, S. C., and the Langley Manufacturing Co., Langley, S. C., have issued a statement of the reorganization plans to the stockholders of those corporations. New

charters have been obtained for each company and officers have been elected as follows: W. C. Langley, New York, president; Geo. E. Spofford, Augusta, Ga., vice-president and general manager; Chas. H. Low, Bath, secretary and treasurer. Messrs. Langley, Spofford, George R. Lombard of Augusta, Wm. Bennett, Wm. McKinley, Jr., and W. H. Seibert of New York, and R. H. Riggs are the directors. Each plant will be operated separately, and the new titles are Langley Mills, Aiken Mills, Seminole Mills. The Aiken capital is \$760,000, with the Seminole capitalized at \$743,500 and the Langley at \$1,348,000. It is understood that the management will rehabilitate the mills in whatever manner is necessary for the best interests of the various plants. These mills have a total of about 92,000 spindles and 2600 looms.

The Cotton Movement.

In his report for June 11 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight for 315 days of the present season was 14,847,188 bales, an increase over the same period last year of 126,804 bales. The exports were 7,948,628 bales, a decrease of 787,989 bales. The takings were, by Northern spinners, 2,770,702 bales, an increase of 152,686 bales; by Southern spinners, 2,941,044 bales, a decrease of 50,159 bales.

Textile Notes.

Equinox Mill, Anderson, S. C., will expend from \$25,000 to \$30,000 for its recently-noted improvements. These will include the construction of a clothroom, a cloth-storage warehouse and 25 cottages, and the installation of an electric-light plant. The Southern Public Utilities Co. has contract for the electric lighting. J. E. Sirrine, Greenville, S. C., is the Equinox Mill's engineer for the additional construction.

R. E. Lee, Laurinburg, N. C., lately noted interested in plan for building cotton mill, proposes the organization of a \$200,000 to \$300,000 company for building a mill of 15,000 spindles; contemplates brick buildings and electric power.

South Texas Cotton Mills, Brenham, Tex., has completed installations of additional new machinery, including two spinning frames of 224 spindles each, etc., purchased from the Saco-Lowell Shops, Lowell, Mass. This mill now has 6048 spindles.

D. H. Warlick, secretary of the Dudley Shoals Cotton Mill Co., Granite Falls, N. C., plans the organization of a company to build a 5000-spindle cotton-yarn mill.

Delgado Mills, Wilmington, N. C., will build a two-story addition, costing \$3200, to be equipped for finishing. R. H. Brady of Wilmington has the contract.

Franklinville (N. C.) Manufacturing Co. has increased capitalization from \$80,000 to \$100,000.

MINING

IN CUSHING OIL AND GAS FIELDS.

The Problem of Conserving the Valuable Output of the Wells.

[Special Correspondence Manufacturers Record.]

Cushing, Okla., June 12.

It is about two years since I wrote to the MANUFACTURERS RECORD from this town. Having just returned to the hub of the Cushing oil and gas fields, I find great changes. The streets are being paved and still more steel oil tanks are being built two miles south of this city. Two quarter-sections of land are already adorned with tanks. Each tank costs about \$13,000 and holds about 60,000 barrels of oil. The oil men thought by erecting the tanks some distance from the gas wells, lightning would not be so liable to ignite the oil in them. But several tanks were destroyed by the fires caused by lightning this spring. It is now admitted that the gas that rises from the oil in the tanks attracts the electricity, ignites the gas, and then conducts the fire into the tanks. It is said that the insurance companies

and the oil magnates will pay \$50,000 to the genius that will construct a contrivance that conducts the escaping gas from the tanks into a gas reservoir in the ground, where it will not attract lightning and can be utilized.

The oil gushers, when first opened, throw large quantities of oil on the trees, the grass, and lots of the valuable stuff runs into the ravines and creeks, spoils the stock water and kills the fish. Exceedingly large quantities of oil and gas have been wasted in the Cushing oil fields, millions of dollars' worth have been "squandered," and the wasting goes on with senseless vigor and vim.

The air is fairly saturated with gas in the northeastern part of the Cushing gas field. Several persons have been burned to death there, and automobiles are warned to keep out of the gas or danzer zone.

It is evident that no drill has so far got below the bottom of the deepest oil sand. Some petrologists say that perhaps the oil-sand strata run down 4500 feet. The deepest wells yield the largest quantities of oil.

The formerly poor Snake Indians and many once needy white farmers of this region found in the oil and gas wells regular rich gold mines. They had wealth thrust upon them without any efforts of their own.

It is estimated that the Cushing oil wells produce nearly 400,000 barrels of oil daily, while the gas wells would produce 800,000,000 cubic feet of gas every month. Only 200,000,000 feet are utilized, the major portion waiting to be used by factories.

First-class fire slag and brick clay has been found in this vicinity, but Cushing is still without a brick factory. Factories will be supplied with nearly free gas here, at least during the first five years. Cushing is now blessed with four railroads that do a large passenger and freight business.

New oil-sand strata have recently been struck a short distance northwest and south of Cushing.

There is talk of building a solid, everlasting bridge over the four miles distant Cimarron River. It will probably cost \$50,000. It is estimated that the bridges over the Deep Fork drainage canal will cost the taxpayers of Lincoln county \$100,000.

During the recent protracted rains in the Cushing oil fields several of the early risers were scared to see ink-black rain falling. They were told that the black smoke from the burning tanks caused the black rain, and that the end of the world wasn't near at hand.

The gospel of better roads is loudly preached in this region. Cushing will have several miles of paved streets by next winter. Everybody admits that concrete is bound to become the chief and about the only building material in the petrolopolis of Cushing.

MATT DUH..

Lakeland Phosphate Plant to Resume.

[Special Correspondence Manufacturers Record.]

Lakeland, Fla., June 12.

The Lakeland Phosphate Co. will resume work at its plant in a short while. Last summer, when hostilities started in Europe, the company suspended all work just as the plant was preparing to begin operations. This is one of the most complete and labor-saving plants in this country, with a capacity of from 300 to 400 tons of rock per day. As to the machinery: three Erie City vertical boilers fitted for wood, coal or oil as fuel, aggregating a boiler capacity of 1000 horse-power. The boilers are fitted with superheaters. Three engines of 750 horse-power each, double expansion, with a 4000-gallon pump, rope drive, of 180 pounds pressure. Air compressor of 250 horse-power capacity. All engines are directly connected to the electric generators. One of the most novel sights about this plant is the reinforced smokestack, 175 feet high. The plant is provided with a tank of 20,000 gallons capacity. The officers of the company are C. W. Deen, president; H. E. Memminger, vice-president and general manager; W. D. McRae, secretary and treasurer.

C. D. CLOUGH.

Bauxite in Georgia.

Prof. S. W. McCallie, State Geologist of Georgia, announces the discovery of what may prove to be a valuable bauxite deposit in the Piedmont area of the State, a region in which it has been supposed that bauxite was not likely to be found. The locality in which this new find occurs is at the base of Pine Mountain, Meri-

wether county, three miles west of Warm Springs, on W. Howard Smith's property. The main outcropping of the ore occurs on a knoll in the form of huge boulders, some of which weigh several tons. The length of this individual exposure is approximately 200 feet, while its width is only about half as great. On other knolls or spurs of the mountain in the immediate vicinity, but lying farther to the west are to be seen more or less drift ore, which indicates an extension of the ore in that direction. The ore has the usual pisolitic or pea structure, and is mostly of reddish color. The analyses of samples of the ore from the weathered outcropping show from 51 to 54 per cent. alumina, .93 to 8 per cent. iron oxide, and from 5 to 16 per cent. silica. The analyses indicate that these ores, though not of the highest grade, can be used both for the manufacture of aluminum and alundum, the latter an artificial corundum used as an abrasive.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Revolvers, Shells, Powder, Etc.

Edgar Franklin & Co., 62 Basinghall street, London, E. C., England:

"We can do with 100,000 automatic revolvers, best white flour in large quantities, packed in 280-pound bags c. i. f. English or French port, net cash bankers' guarantee on arrival. If price is right can obtain contract for several 100,000 tons, delivery 10,000 tons weekly. We can also do with shells, specifications of which, price, quantity and delivery suffice; same would also apply to gun cotton and smokeless powder."

Wanted by Glasgow Agent.

John Murray, manufacturers' agent, 24 Howard street, Glasgow, Scotland:

"Put me in touch with manufacturers of metal buttons, braces and strap sizes for men's dungaree clothing; also buckles for back straps. Manufacturers send samples and prices, and say if in stock or to make bond before delivery. I can sell any quantity. Must be reliable makes, and please state commission to me as agent. Have also inquiries for Buffalo horn tea knives and bone salt shakers."

Want Machinery for Shells.

Ashmore, Benson, Pease & Co., Ltd., Stockton-on-Tees, England:

"We want machinery and presses for the manufacture of high-class shells of all sizes. Only makers who can guarantee delivery from stock or immediate delivery can, at the moment, be considered. Catalogues and price-list to be forwarded to 'Managing Director' as early as possible."

Machines for Chocolate, Confections, Etc.

T. M. Sokuler, Moscow, Russia:

"I am interested in American products for confections and chocolate, that is, cocoa beans, cocoa butter, machines for making chocolate and confections and all tools for confectioners."

For Russian Trade.

D. A. Ruffman, P. O. Box No. 3, Petrograd, Russia:

"Regarding outlook for selling American goods in my country. At present it is difficult to carry on business, for the rate of exchange is far from being to our advantage; also freight and insurance rates make business difficult. The problem of doing business here is a great one, and cannot be handled to advantage from the other side. Your people would have to come to

Russia and study matters on the spot. If your friends should require any help refer them to me. If you wish to know who I am, apply to Arthur Colton Company, Detroit; Parke, Davis & Co., Detroit; H. H. Gross, First National Bank Building, Chicago, and Lowrie Safe & Lock Manufacturing Co., Chicago."

For Belgium's Trade.

Willy Lamot (of Antwerp), temporary address Shardshighs, Halstead, Essex, England:

"Inform your readers that several Belgian business men have created an organization having a double object—to introduce in Belgium, as soon as the war is over, all American products and manufactures; to employ as agents, representatives, etc., a large number of Belgian manufacturers and business men who have been partly ruined, but still possess enough capital and can give the necessary guarantees as agents, dealers, etc."

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

McKeen Motor Car Co. Develops New Products.

A highway passenger coach of which the McKeen railway gasoline motor car is the prototype has been developed by the McKeen Motor Car Co. of Omaha, Neb. These highway coaches, which are mounted on a 3½-ton gasoline truck with a wheel base of 216 inches, have rubber-tired wheels for street and road service and may also be operated on urban lines when equipped with railroad flanged wheels.

The design and construction of the coach is said to embrace all the hygienic and attractive details of the superstructure as well as the ventilating, heating and sanitary facilities of the McKeen motor car, which has been successfully operated on railroads for the last 10 years. To add to the comfortable riding qualities of the highway coach, individual chairs of a patented steel-spiral-spring type with pneumatic shock-absorbing cushioned seats have been provided for each passenger, and air-tight round plate-glass windows afford uninterrupted view in all directions. The windows when raised give a full opening of 24½ inches and enhance the pleasure of riding during the high temperature of the summer weather.

Exhaust suction ventilators on the roof maintain constant circulation and removal of foul air, producing hygienic accommodation for the urban traveler. The car is electrically lighted and between each two windows is an electric push button for signaling purposes. Entrance to the car is gained through a two-leaf outward folding door beside the driver's position. Door-operating mechanism is controlled by the driver, the prepayment fare collection being under his supervision. Exit is through double-leaf outward folding door in the side near the rear. Adequate heating facilities of the car for winter service are obtained from the waste product of the gasoline engine.

Another new product of the McKeen company is a 70-foot combined baggage, mail, express and power car which is equipped with a 300-horse-power engine to give sufficient power to haul a standard steel railway coach as trailer. This new 300-horse-power engine is said to have been designed to meet the views of Mr. A. L. Mohler, president of the Union Pacific Railroad, and the baggage, mail, express and power car is the development of an idea conceived by Mr. Charles Ware, general manager of the Union Pacific, for a power car that would afford facilities of the usual local and branch line train. On its initial trip the car is reported to have made a speed of 55 miles per hour. Seating capacity of the motor car train is 78 passengers.

Greater economy and earning capacity for the railroad and at the same time greater comfort and better service for the traveling public are among the advantages claimed for this type of car.

The McKeen "D" 300-horse-power reversible engine truck is an enlargement of the latest model type "C" 200-horse-power motor truck, the present standards and design being the result of 10 years' experience



McKEEN HIGHWAY COACH.

in the practical operation of gasoline motor cars. The engine is reversed by air-pressure mechanism, the control of which, together with the throttle, is placed on the righthand side of the engine, enabling the motorman to remain seated while taking signals and operating the car.

Mims Adjustable Clamp for Concrete Forms.

A simple and practical clamp for concrete forms has been invented and patented by J. R. Mims, Luray, Va. Advantages claimed for the device is that it can be adjusted for columns of various sizes, can be employed for forming octagonal columns as well as square columns, and combines simplicity, durability and efficiency.

The invention consists of a plurality of bars having their ends disposed in overlapping relation. One end of each of the bars includes apertures, so as to permit the bars to be pivoted at this end. The other ends of the bars are provided with notches. A lock plate, including slots for receiving the notched ends of the bars, is adapted to be disposed over the overlapping notched ends, so as to hold them firmly in position. The device is also provided with a locking lever for drawing the boards together, so that there will be no cracks in the form.



MIMS ADJUSTABLE CLAMP.

All that is required to construct columns where these clamps are used is to get out pieces of the proper width and nail a 1x2 baton at each end, and where columns are exceptionally long, place one in center to hold the boards together until clamps can be put in place, as these clamps are claimed to hold forms perfectly rigid after being placed. Space off columns for the required number of clamps, stick a few nails around the column on a line to rest clamp on until they are locked. After clamps have been adjusted to the proper size, slip lock in place, place locking lever in holes at end where notches are located, and draw clamps together until all the cracks in the boards are closed, then force lock plates in position. After columns have been filled and the forms are ready to be removed, remove bolt at the adjusting corners and release the clamps. These bolts are made tapered, so they can readily be driven out.

Mims clamps are made from cold-rolled steel, and are adjustable from 12 inches to 30 inches square, and are also made for larger columns as required. The bars are made by the same templet, thus saving time in assembling the clamps. Each set may be bundled in a separate compact form when not in use.

The National Paving Brick Manufacturers' Association will hold its annual meeting October 11-12 at Dayton, O. The annual meeting of the American Society of Municipal Improvements will be held coincidentally.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and West. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Montgomery.—Montgomery county will construct steel bridge over Pinala Creek on Haynesville Rd.; Board of Revenue receives bids until July 12; Thos. H. Edwards, County Engr. (See Machinery Wanted—Bridge Construction.)

Fla., Bradentown.—Manatee County Parish Road and Bridge Dist. votes July 19 on \$110,400 bonds for bridge and road improvement. Address County Comms.

Fla., Clearwater.—E. W. Parker of Tampa and others completed arrangements for and will begin construction within 60 days of bridge; bridge plans include highway and railroad. (Bridge lately reported to cost \$100,000, length 2 mi., and extend from mainland to Island Park.)

Fla., Pensacola.—Escambia County Commissioners let contract W. E. Taylor to construct concrete bridge across Eight Mile Creek.

Fla., St. Augustine.—Seth Perkins and others secured permit to build bridge across North River; length 3200 ft.; width 21 ft.; concrete piling and timber floor; jack-knife draw.

Fla., St. Petersburg.—City Comms. will construct concrete bridge across Booker Creek; Dr. J. G. Bradshaw, Mayor.

Ga., Macon.—Bibb county (lately noted to construct concrete bridge on Columbus Rd.) will not erect any new bridges this year; J. Ross Bowdre, Clerk County Comms.

Ga., Rome.—Floyd County Board of Roads and Revenues let contract Hackedorn Contracting Co. of Indianapolis, Ind., at \$61,500 to construct reinforced concrete bridge 376 ft. long across Etowah River at 2d Ave., and at about \$61,000 to build reinforced concrete arch bridge 407 ft. long across same river at Broad St.; to Hardaway Contracting Co. of Columbus, Ga., at \$87,000 to build steel truss bridge about 376 ft. long, on concrete substructure, across Oostanaula River at 5th Ave.; total cost, \$210,000; Consult. Engrs., Greiner & Whitman, Fidelity Bldg., Baltimore, Md., and W. C. Spiker, Hurt Bldg., Atlanta, Ga.; Kieffer Lindsey, County Engr., Rome. (Call for bids and further facts lately noted.)

Ky., Elizabethtown.—Hardin County Commissioners, Elizabethtown, and Grayson County Comms., Leitchfield, Ky., let contract Champion Bridge Co., Wilmington, O., at \$2981 to construct bridge over Nolin Fork between two counties; length 150 ft.; width 14 ft.; also let contract Murphy Bros., Bowling Green, Ky., for stone work and foundation. (Lately noted.)

La., Lake Charles.—Calcasieu Parish Highway Dept. let contract Missouri Valley Bridge & Iron Co., Leavenworth, Kans., at about \$20,000 to construct north approach to Calcasieu River bridge; P. H. Frankland, Bridge Engr. Further facts lately noted. (See Road and Street Work.)

La., New Orleans.—City let contract Fromherz & Drennan, New Orleans, at \$10,750 to construct bridge over Florida Ave. canal at Convent Ave.

Md., Baltimore.—City invites new bids until June 23 to reconstruct old Chase St. bridge on Bentalou St. over Western Maryland Ry.; H. K. McCay, City Engr.; lately noted. (See Machinery Wanted.)

Md., Frostburg.—City let contract Luten Bridge Co., York, Pa., at \$5340 to construct bridge over Cumberland & Pennsylvania R. R. cut on Bowery St. (Lately noted.)

Miss., Columbus.—Lowndes County Supervisors will build 4 steel bridges and 3 concrete culverts; bids until July 5; Gus E. Hauser, Jr., Engr., Columbus. (See Machinery Wanted—Bridge Construction.)

Miss., Meridian.—City contemplates \$10,000 bond issue to construct concrete culvert, sewers and concrete bridges. Address The Mayor.

Mo., St. Louis.—Missouri Pacific Ry. system, J. R. Stephens, Ch. Engr., St. Louis, and St. Louis & San Francisco R. R., F. G. Jonah, Ch. Engr., St. Louis, have agreed to construct concrete viaduct across Chouteau Ave. grade crossing; width, 80 ft.; length, 1680 ft.; cost, \$250,000.

N. C., High Point.—North Carolina Traction Co., B. D. Hammond, Gen. Mgr., P. O. Box 21, Sta. A, Boston, will build 1 steel 300-ft. and 1 150-ft. bridge, 60 ft. above water; also 600-ft. tunnel in connection with 137-mi. railroad construction for which bids will be opened July 1. (See Machinery Wanted—Railroad Construction, etc.)

N. C., Marshall.—Madison County Highway Com. will construct 676-ft. bridge, requiring about 420,000 lbs. steel and 600 yds. concrete; bids until June 22; J. B. Clingman, Engr., Marshall. (See Machinery Wanted—Bridge Construction.)

Okla., Tulsa.—Tulsa County Comms. adopted plans by Harrington, Howard & Ash, Consult. Engrs., Kansas City, Mo., for bridge across Arkansas River; bridge proper 1460 ft. long; approaches 450 and 400 ft. long, respectively, for Tulsa and West Tulsa sides; 15 arches in bridge proper, distance of each being 71½ ft.; 30-ft. roadway, with 4-ft. sidewalk on each side and single car line; bridgeway, including approaches, to be paved either with 4-in. crenate blocks or asphaltic concrete; will invite bids providing for both kinds of paving; cost of railway track \$5000; total estimated cost \$183,000; Lewis Cline, County Clerk. (Lately noted.)

Tex., Dallas.—Dallas county will construct 26-ft. reinforced concrete bridge across Rawhide Branch; bids until June 17; Chas. E. Gross, County Auditor. (See Machinery Wanted.)

Tex., Dallas.—Southern Methodist University, R. S. Hyer, Prest., will construct concrete bridges to cost \$6000. (See Water-Works.)

W. Va., Grafton.—Taylor County Court will build reinforced concrete arch bridge across Tygart's Valley River at St. Marys St., connecting east and west Grafton; replace present bridge; proposed bridge 560 ft. long and 18-ft. roadway, with 1-ft. walk, having clear width 7 ft.; bids until June 19; plans and specifications at office County Clerk and Frank D. McEntee, Engr., Union Bank Bldg., Clarksburg, W. Va.; copies furnished for \$5. (See Machinery Wanted—Bridge Construction.)

W. Va., Kingston.—Fayette County Commissioners, Fayetteville, W. Va., let contract to Ferris Bridge Co. of Charleston at \$2145 to construct bridge across Paint Creek; concrete; 2 spans, 30 ft. each.

W. Va., Marlinton.—Pocahontas County Comms. let contract Luten Bridge Co., York, Pa., at \$15,000 to construct 4-span reinforced concrete bridge across Greenbrier River at Marlinton.

W. Va., Milton.—Cabell County Comms., Huntington, invite bids until July 6 for concrete work for bridge over Chesapeake & Ohio Ry. Co.'s right of way at west end of old bridge across Mud River near Milton; Engrs., Oliver & Maupin, Huntington. (See Machinery Wanted.)

W. Va., Rainelle.—Greenbrier county will construct 3 bridges; one 25 ft. long over Little Sewell Creek and two 20 ft. long; all to have 16-ft. roadways; reinforced concrete or steel; bids until July 6; John S. Crawford, Clerk County Court, Lewisburg, W. Va. (See Machinery Wanted, Bridge Construction.)

CANNING AND PACKING PLANTS

Md., Baltimore.—Kingen Provision Co., 350-352 N. Holliday St., has plans by C. M. Anderson, 324 N. Charles St., Baltimore, for addition to plant.

CLAYWORKING PLANTS

N. C., Oxford.—Cement Bricks.—John C. Davis (lately noted with others to establish plant) may erect cement-brick plant. (See Concrete and Cement Plants.)

Tex., Abilene.—Bricks.—Abilene Pressed Brick Co. will rebuild brick plant burned last year.

COAL MINES AND COKE OVENS

Ark., Clarksville.—Eureka Mining Co., capital \$5000, incptd.; H. L. Mardis, Prest.; E. J. Mardis, Secy.-Treas. and Mgr.; will develop 780 acres coal land; daily output, 300 tons coal. (Lately noted incptd. under Mining.)

Ala., Ensley.—Lindsay-Long Coal & Lumber Co., capital stock \$5000; incptd.; J. E. Lindsay, Prest. and Secy.; A. R. Long, Treas.; R. C. Long, V.-P.

Ky., Keweenaw.—Keweenaw Coal Mining Co. will install additional machinery to include engine, boiler, generator, etc.; has ordered this machinery. (Lately noted under Pikeville, as increasing capital from \$10,000 to \$20,000.)

Ky., Whitesburg.—J. L. Litz and others of Coeburn, Va., purchased 1500 acres coal and timber land along Upper Rockhouse Creek; reported to develop.

Va., Wise.—Wise Coal Land Corp., capital \$100,000, chartered; C. A. Johnson, Prest.; C. H. Holyfield, V.-P.; C. M. Fulton, Secy.

W. Va., Charleston.—Coal River Colliery Co. organized; offices No. 3, I. O. O. F. Bldg.; W. C. Sharpe, Prest., St. Albans, W. Va.; M. P. Morris, V.-P., Charleston; John P. Vaughan, Secy., Charleston; A. P. Sharpe, Treas., Huntington, W. Va.; will develop 200 acres coal land; daily output 300 tons; has not yet determined as to character and cost of machinery except that will use electric power.

CONCRETE AND CEMENT PLANTS

N. C., Oxford.—Cement Bricks.—John C. Davis contemplates erection of cement-brick plant; open building proposals in October and install equipment, cost \$2000, to manufacture 15,000 cement bricks daily; lately noted under Clayworking Plants. (See Machinery Wanted—Cement Brick Machinery.)

COTTON COMPRESSES AND GINS

Okla., Pauls Valley.—J. J. Cummings will remodel gin. (See Cottonseed-Oil Mills.)

Tenn., Memphis.—Memphis Terminal Corp., W. G. Turner, V.-P., purchased Merchants' Cotton Press & Storage Co.'s properties, including Riverside Compress and 42 acres land fronting 1600 ft. on Mississippi River; also leased from company old navy-yard compresses, sheds and yards; plans various improvements, including docks capable of handling heavy freight and especially cotton, lumber and iron, probably elevators to carry freight from docks to railroad lines and warehouse above river level, etc. Details not sufficiently matured for definite information to be given; some time yet before particulars available.

Tex., Snyder.—Western Compress & Storage Co., Geo. Finberg, Gen. Mgr., Abilene, Tex., will remove plant from Sagerton, Tex., to Snyder; erect building of ordinary construction, costing about \$35,000, bids to be opened Sept. 1; has complete equipment of machinery.

COTTONSEED-OIL MILLS

Ala., Decatur.—Southern Cotton Oil Co. is reported to expend \$4000 to \$6000 in improvements to plant.

Ga., Eastman.—P. J. Hoskins purchased Eastman Oil Mill; reported to remodel and operate.

Ga., Statesboro.—R. L. McMath and others of Americus, Ga., purchased cottonseed-oil mill of Hitch-Edwards Mfg. Co.; reported to improve and operate.

Okla., Pauls Valley.—J. J. Cummings will enlarge mill; install additional expeller, seed-cleaning machinery, filter, 150 H. P. steel-cased return-flue boiler and transmission; also remodel gin plant by erecting mill building and then using present building for seed storage.

DRAINAGE SYSTEMS

Ark., Turrell.—Crittenden County Drainage Dist. No. 5 will construct 28 mi. drainage canals, etc.; bids opened June 15; Engr., Willis E. Ayres, Memphis; W. S. Danner, Chrmn. Comms.

Fla., Bradentown.—Shroeder Land & Timber Co., Milwaukee, Wis., is reported as having surveys made by Hiram McElroy, Engr., for drainage of 65,000 acres; reported to expend about \$1,000,000 for drainage and other improvements preparatory to settlement.

Fla., Elkton.—St. John County Comms. invite bids to construct drainage canal in Elkton Dist.; estimated cost \$10,500; issued bonds.

La., Sulphur.—Calcasieu Parish, Sulphur Drainage Dist. No. 2, will construct 15 mi. open ditches near Sulphur Mine Station; W. H. Managan, Prest., Westlake, La.; receive bids until July 7; lately noted to vote July 6 on \$5000 bonds for gravity drainage system. (See Machinery Wanted—Drainage System.)

Tex., Victoria.—Victoria County Drainage Dist. votes June 23 on \$190,500 bonds to con-

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

struct drainage system; district comprises 75,000 acres in northeastern section of county. Address County Comrs.

ELECTRIC PLANTS

Ga., Thomasville.—City will vote on bonds to improve electric-light plant, etc. Address The Mayor. (See Road and Street Work.)

Ky., Ft. Thomas.—City is prepared to grant electric-light franchise. Address Winston J. Ross, Secy. City Council. (See Machinery Wanted—Electric-light Plant Franchise.)

Md., Lonaconing.—City Council granted franchise Edison Electric Illuminating Co. to construct electric light and power system; furnish power to Maryland Coal Co.'s mines in Kingsley.

Mo., Polo.—City voted to grant franchise to Water, Gas & Electric Co. of Excelsior Springs, Mo., to furnish electricity.

Okla., Oklton.—H. C. Badger, Kiefer, Okla., will build electric plant costing \$15,000; furnish electricity for lighting and power; has contracted for 2 engines of 110 H. P. each and 2 50-kilowatt A. C. generators; C. F. Petty, Mgr., Oklton. (Messrs. Petty and Badger lately noted as to install plant, etc.)

Okla., Tyrone.—Tyrone Light, Ice & Power Co. (Walter J. Harville, interested) has franchise to construct electric-light and power system.

S. C., Conway.—Quattlebaum Light & Ice Co., capital stock \$30,000, inceptd.; Paul Quattlebaum, Pres.; C. P. Quattlebaum, V.-P.; McQueen Quattlebaum, Secy.-Treas.

Tex., El Campo.—Central Service Co., capital stock \$300,000, inceptd. by F. J. Hardy, W. J. Hefner, R. L. Correll and others.

Tex., El Paso.—Jolly & Ware will erect brick and steel addition to Southwestern power-house at shops; 30x34x23 ft.; cost \$3000.

Tex., Marshall.—Marshall Electric Co. will construct high-tension electric system from Marshall to Jefferson.

Va., Dayton.—City, J. L. Fuqua, Mayor, will construct previously-noted electric plant, sewers and water-works; bids until June 22. (See Water-Works. See Machinery Wanted—Water-works, Electric-light Plant and Sewers.)

Va., Norton.—Norton Coal Co. will rebuild power-house reported burned at estimated loss of \$25,000.

W. Va., Kenova.—Ohio Valley Electric Railway Co. of Huntington, W. Va., let contract General Electric Co. of Schenectady, N. Y., at \$18,145 for turbo-generator for power-house; Curtis type; capacity 11,000 volts and 6750 kw.

W. Va., Kenova.—Ohio Valley Electric Ry Co., W. S. Newton, Mgr., Huntington, W. Va., let contract to General Electric Co., Schenectady, N. Y., for 6750 K. W. turbine generator for power station; Jas. Fagan, local Engr.

FLOUR, FEED AND MEAL MILLS

Ala., Georgiana.—McGowan-Bennett Mercantile Co. let contract to Gruendler Patent Crusher & Pulverizer Co., 924 1st St., St. Louis, Mo., for machinery for lately-noted molasses feed plant; includes engine, power-transmission machinery, scales, mixers and pulverizers; Gruendler Co. to supervise installation; construction of 2-story mill is progressing. (Capacity previously noted as 50 to 60 tons mixed feeds daily.)

Ala., Troy.—W. B. Polmar will establish mill to grind beans, peas, corn and other products into stock feed.

Ark., Brockett.—M. McNabb of Maynard, Ark., will establish flour mill.

Ark., Pocahontas.—Jos. H. DeClerk will build flour mill.

Ark., Texarkana.—Clark-Lynn Grain Co. will build milling and grain plant; 2 stories; brick and cement.

Fla., Gainesville.—Alachua County Milling & Produce Co., Stafford Burgis, Mgr., will erect mill construction buildings costing about \$7000; will install shucker, sheller and cleaner for hourly capacity 125 bus. corn; drymill for 60 bus. hourly; meal, bolt and feed mill, about 30 bus. hourly; storage capacity, 15,000 bus.; elevators, conveyors, etc., to handle grain and other products. (See Machinery Wanted—Cornmeal Mill, etc.)

Ky., Georgetown.—Company is being organized with \$25,000 capital stock to operate mill; plans to purchase flour mill of R. H. Wolfe & Son; C. J. Weisenberger (Propr. Blue Grass Mill) and Ben Oldham are interested.

Ky., Franklin.—Electric Mill Co., capital \$10,000, inceptd. by J. T. Lovell, L. S. Link and M. E. Johnson.

Md., Ellicott City.—C. A. Gambrill Mfg. Co. let contract for equipment for lately-noted drier house; Consolidated Engineering Co., Contr., 243 Calvert Bldg., Baltimore, progressing with construction of 4-story fireproof brick buildings to cost \$10,000.

Mo., Joplin.—Rollamo Milling Co., capital \$9000, inceptd. by W. V. White, Julius C. Miller and Julius C. Miller, Jr.

N. C., Gibsonville.—Gibsonville Milling Co., capital \$25,000, inceptd. by J. W. Burles, A. B. Owen, D. M. Davidson and C. E. Hornaday.

N. C., Sanford.—J. B. Robeson is interested in erection of flour mill.

Okla., Tablequah.—Tablequah Mill & Elevator Co. (lately noted inceptd., capital stock \$15,000) organized; Percy Wyley, Pres.; T. O. Graham, V.-P.; J. W. McSpadden, Secy.-Treas.; erect 24x80-ft. ordinary-construction building; cost \$4500; plans by C. J. Wolaver, Muskogee, Okla.; arranged for machinery.

S. C., Camden.—J. Frank Williams will build flour mill; daily capacity 35 bbls.

S. C., Darlington.—Darlington Wheat & Corn Roller Mills Co. will increase capital stock to \$10,000.

Tex., Temple.—S. A. and J. F. Lillard of Decatur, Tex., purchased Werkiser-Polk flour mill; reported to expend about \$10,000 for improvements.

FOUNDRY AND MACHINE PLANTS

Ala., Anniston.—Canning Machines and Cans.—Anniston Can & Machine Mfg. Co. (lately noted organized by J. L. Mansfield and others) purchased equipment, cost about \$1000, to manufacture tin cans and canning machines; daily capacity 15,000 cans and 5 machines.

Ky., Lexington—Steel Ties.—Jas. P. Donovan of Georgetown, Ky., is promoting organization of company to manufacture patented spikeless tie of boiler steel.

PROPOSAL ADVERTISEMENTS

IN THIS ISSUE

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Mo., St. Louis.—Package-tying and Wrapping Machines.—Tynnot Machine Co., capital stock \$16,000, inceptd. by Henry H. and Roy W. Brackman and Fred Demko, Jr.

Okla., Elgin.—Threshing Machines.—Elgin Threshing Machine Co., capital stock \$300, inceptd. by O. H. Putney, J. L. Brown, C. W. Compton and others.

Va., Richmond.—Brass Foundry.—Richmond Forging Corp. will erect brass foundry; 1 story; estimated cost \$12,000.

GAS AND OIL ENTERPRISES

Ala., Tuscaloosa.—Gasholder.—Birmingham-Tuscaloosa Ry. & Utilities Co., 1831 5th Ave., Birmingham, Walter A. Allison, Consult. Engr., 403 Wister St., Germantown, Philadelphia, Pa., will construct gasholder of 100,000 cu. ft. capacity and lay 2 to 8-in. gas mains; will contract for gasholder and laying mains. (See Machinery Wanted, Gasholder, Piping.)

Ky., Frankfort.—Frankfort Natural Gas Co., capital stock \$600,000, inceptd.; will construct natural-gas pipe line from Lexington; Robt. S. Hampton, Pres., Titusville, Pa.; Jas. H. Hazelrigg, V.-P., Frankfort; W. O. Walker, Secy.-Treas., Oil City, Pa.; John Tonkin, Gen. Mgr., Oil City, Pa.; Joseph Seek, Oil City, Pa.; Estel Biles, Titusville, Pa., and D. L. Hazelrigg, Frankfort. (City lately noted as having granted franchise to Hazelrigg & Hazelrigg, representing Frankfort National Gas Co.)

Ky., Lexington.—Eastern Oil & Gas Co., capital stock \$6000, inceptd. by Jacob Speyer, Philip Gormley and D. A. Crosby.

Ky., Lexington.—Easter Oil & Gas Co., capital \$6000, inceptd. by Jacob Speyer, Philip J. Gormley and D. A. Crosby.

Ky., Ft. Thomas.—Gas Plant.—City is prepared to grant gas franchise. Address Winston J. Ross, Secy. City Council. (See Machinery Wanted—Gas Franchise.)

La., Shreveport.—Ogilvie Mutual Oil Co., capital stock \$30,000, inceptd.; E. A. Shaw, Pres.; W. W. Newcomb, V.-P.; R. F. Brabston, Secy.-Treas., all of Shreveport.

La., Vinton.—Packard Oil Co., capital stock \$25,000, inceptd.; J. O. Mack, Pres.; E. W. Thompson and R. E. Collins, V.-Ps.; L. Sells, Secy.-Treas.

Md., Baltimore.—Gas.—Consolidated Gas, Electric Light & Power Co., Lexington and Liberty Sts., has plans by Geo. Baedekopf company's Engr. for completion of valve-house; 90x85 ft.; fireproof; brick and steel; slate roof; concrete floor; cost about \$30,000; bidders are John Waters, 23 E. Center St.; R. F. Bennett Building Co., 123 S. Howard St.; Morrow Bros., 1201 Fidelity Bldg.; all of Baltimore; bids due June 17.

Mo., Kansas City.—Oil Refinery.—Producers' Refining Co. increased capital stock from \$600,000 to \$800,000.

Okla., Bartlesville.—Gasoline.—Golden Gasoline Co., lately noted (under Dewey, Okla.) to double plant, has all contracts let; capital stock \$30,000; 2-in. and 4½ pipe lines; 10 mi. piping; pumping station capacity, 1,500,000 gals.; F. O. McCreary, Engr.

Okla., Cushing.—Oil Pipe Line.—Arthur Batty of Buffalo, N. Y., is reported to construct pipe line from Cushing field north into Kansas.

Okla., Blackwell.—Effe Myers Oil Co., capital stock \$5000, inceptd. by H. L. Spencer, H. L. Vickery and H. S. Gurley.

Okla., Cushing.—Wichita Gas Co. is reported to build pumping station.

Okla., Henryetta.—Wolf Creek Oil Co., capital stock \$3000, inceptd. by J. W. Kincaid, A. W. Anderson and G. W. Burnett.

Okla., Tulsa.—Oil & Gas Leasing & Producing Co., capital \$5000, inceptd. by E. R. Perry, J. H. Crocker and H. A. Gibson.

C. Straughan, T. W. Robertson and G. E. Gwinn.

Tex., Taylor.—Bowers-Witherspoon Oil Co., capital stock \$100,000, inceptd. by A. L. Bowers, C. L. Witherspoon and S. Maier.

Tex., Waco.—McLennan County Oil & Gas Co. (C. L. Watson and others) leased 5000 acres about 13 mi. from Waco; let contract S. H. Walton of Fort Worth to drill 3 wells 1500 ft. deep. (Lately noted inceptd. with \$12,000 capital stock.)

W. Va., Parkersburg.—Jefferson Oil Co., capital \$5000, inceptd. by Fred T. Martin, G. A. Hechmer, J. E. Lewis and others, all of Grafton.

W. Va., Parkersburg.—Warner Oil & Gas Co., capital \$50,000, inceptd. by A. C. Robinson, Jr., G. V. Barrows, G. W. McCullough and others.

ICE AND COLD-STORAGE PLANTS

Fla., Jacksonville.—Smith, Richardson & Conway let contract to erect meat-storage and store building. (See Stores, Contracts Awarded.)

Ga., Blakely.—City voted to establish municipal ice plant. Address The Mayor.

Ga., Thomasville.—City will vote on bonds to improve ice plant, etc. Address The Mayor. (See Road and Street Work.)

Ky., Harlan.—W. H. Hunter of Elizabethton, Tenn., will build ice plant and water-works; estimated cost \$50,000.

S. C., Conway.—Quattlebaum Light & Ice Co. inceptd.; Paul Quattlebaum, Pres. (See Electric Plants.)

Tenn., Lone Mountain.—Lone Mountain Milling Co. will build cold-storage house.

Tex., Houston.—Houston Ice & Brewing Assn. will erect addition to 2-story building on Buffalo Bayou; cost \$4000.

Tex., Rockwall.—Rockwall Ice Co. will operate plant erected about 1 year ago as Rockwall Artesian Ice Co.'s plant. (Rockwall Ice Co. lately noted inceptd., capital stock \$6000, by F. H. Doran and others.)

IRRIGATION SYSTEMS

Tex., Donna.—Donna Irrigation Dist. No. 1, Hidalgo county, D. H. Barr, Secy.-Mgr., defeated \$750,000 bonds to construct irrigation system. (Lately noted.)

Tex., Rio Grande.—A. M. Kelsey will install plant to irrigate 50 acres to be planted in fruits and vegetables.

LAND DEVELOPMENTS

Ala., Calvert.—F. W. Boykin of Calvert, J. M. Bain and W. A. Roberts of Mobile, Ala., are reported interested in plan by which Jantua Plantation Co. (New York, Pennsylvania and Ohio capitalists) will purchase and develop 100,000 acres land between Calvert and Healing Springs on Alabama, Tennessee & Northern R. R.; plans contemplate cultivation of fruit, building of industrial city, etc.

Fla., Anona.—Tampa & Gulf Coast R. R., C. H. Lutz, Gen. Mgr., Ybor City, Fla., will develop property at Indian Beach, near Anona, as resort; improvements to include hotel, bathing-house, dancing pavilion, etc.

Fla., Carters.—Italian Development Co. organized; Sidney E. Trumbull, Pres., Johnstown, N. Y.; Norton H. Rutherford, V.-P., St. Catharines, Ontario, Canada; John Malcolmson, also of St. Catharines, Gen. Mgr.; Florida offices in Deen & Bryant Bldg., Lakeland, Fla.; proposes to establish city of Ita-Helena; plans include street and sidewalk paving, water supply, lighting equipment, sewer system, construction of dwellings and other buildings, etc.

Fla., Fellsmere.—Florida Plantations Co. will meet June 23 to consider increase in capital stock from \$1,000,000 to \$2,000,000.

N. C., Charlotte.—Parks Land Co., capital \$50,000, inceptd. by D. P. Hutchison, E. O. Anderson, Chas. F. Dalton and E. C. Griffith.

Va., Hopewell.—Hopewell Land Co., capital \$5000, inceptd.; H. C. Hopgood, Pres.; E. M. Funkhouser, V. P.; both of Roanoke, Va.; I. C. Shore, Secy.-Treas., Petersburg, Va.

W. Va., Parkersburg.—Par Bel Beach Co., capital stock \$5000, inceptd. by H. C. Gordon, J. E. Fuller, J. E. Tigner, Darr Casto and C. B. Oliver; all of Parkersburg.

LUMBER MANUFACTURING

Ark., Gould.—A. D. Maus and J. B. Leatheman will build hardwood mill; daily capacity 25,000 ft.; acquired tupelo gum and hardwood timber land; purchased machinery.

Fla., Williston.—Dowling Lumber & Crate Co. (lately noted as "Gatlin & Dowling"), T. B. Dowling, Treas. and Mgr., has not set date for opening proposals for plant to be rebuilt, but will erect 32x500-ft. ordinary mill-construction sawmill building; install heavy hand mill.

La., Shreveport.—Robert Lumber & Grain Co., capital stock \$50,000, incptd.; T. G. Roberts, Pres.; John Weber, V.-P.; H. C. Wildgen, Secy.; Fred Humburg, Treas.

Miss., D'Lo (not a postoffice).—Finkbine Lumber Co., Wiggins, Miss., will build sawmill; electric power.

Tenn., Memphis.—Eddy B. Brown Lumber Co., capital stock \$15,000, incptd. by Eddy B. Brown, W. Rexford Brown, Herman Brown and others.

Va., Carrsville.—Bradshaw Land & Timber Co., capital stock \$50,000, incptd.; J. T. Bradshaw, Pres.; J. J. Bradshaw, V.-P.; C. J. Bradshaw, Secy.-Treas.

W. Va., White Sulphur Springs.—Anthony Creek Lumber Co. (lately noted incptd. with \$50,000 capital) organized; H. E. Greider, Pres.; J. H. Babb, V.-P.; Jas. G. Babb, Secy.-Treas.; will install portable sawmill for daily capacity 20,000 ft. oak lumber, ties and timbers. (See Machinery Wanted—Railroad Equipment, etc.)

METAL-WORKING PLANTS

Ala., Anniston.—Tin Cans.—Anniston Can & Machine Mfg. Co. has purchased machinery to manufacture tin cans; daily capacity 15,000 cans. (See Foundry and Machine Plants.)

Md., Baltimore.—Tubes.—Baltimore Tube Co. let contract to West Construction Co., Knickerbocker Bldg., Baltimore, to erect casting shop on Wicomico near Bayard St.; 37x62 ft.; fireproof; slag roof; cost \$5000.

MINING

Ark., Rush.—Zinc.—J. W. McDaniel and G. W. Chase are reported to build mill at Ben Carney mine.

Ark., Rush.—Zinc.—John Conness Shepherd is reported to build mill at Mackintosh mine.

Ark., Rush.—Zinc.—Jas. McCarty of Yellville is reported to build mill at Yellow Rose mine.

Ark., Rush.—Gertrude Mining Co., capital \$25,000, incptd. by Ed. Zimmerman and E. E. Schofield of Harrison, Ark., and J. E. Turner of Casey, Ill.

Ga., Atlanta.—Zinc.—Old Friends Zinc Mining Co., capital stock \$25,000, incptd. by J. H. Hawkins, J. Bruce Hough and Horace A. Field.

Ky., Lexington.—Inter-Southern Land & Mining Co., capital \$75,000, incptd. by Chas. Shewey, E. H. Wilford and H. Clay McKee.

Md., Elkton.—Phosphate.—American Phosphate Mining Co. incptd. by Clement M. Egner and others.

Mo., Duenweg.—Lead and Zinc.—Chas. T. Orr (Mgr. Wingfield-Bertha A. Mines) is reported to build concentrating plant with daily capacity 1500 tons.

Mo., Dade County.—Lead and Zinc.—A. J. and M. L. Young of Greenfield and U. S. Keran, Lockwood, Mo. (representing G. & L. Mining Co., Dade county), are arranging to contract for erection of 300-ton concentrating plant in Lawton Mining Dist.; electric equipment; estimated cost \$20,000.

Mo., Joplin.—Lead and Zinc.—Walcott & Co. will build 300-ton concentrating plant.

Mo., Joplin.—Lead and Zinc.—Fighting Wolf Mining Co., capital stock \$50,000, incptd. by D. F. Plumlee, J. Townsend and J. B. Plumlee.

Mo., Joplin.—Lead and Zinc.—St. Joe Mining Co. will erect 250-ton concentrating plant.

Mo., Joplin.—Lead and Zinc.—Sheet Ground Mining Co., capital stock \$15,000, incptd. by Haywood Scott, N. W. Scott and C. Schutte.

Mo., Kansas City.—Media Mining Co., capital stock \$10,000, incptd. by Wm. Kenefick, Paul H. Easley and Arthur Miller.

Mo., Pittsburg.—Zinc.—Pittsburg Zinc Co., E. V. Lanyon, Pres., will build 2 additional blocks at smelter.

Mo., Pittsburg.—Zinc.—Joplin Ore & Smelter Co., A. S. Raymond, Mgr., Joplin, Mo., will erect 4 additional blocks at mining plant.

Mo., St. Louis.—Lead and Zinc.—Pioneers Mining, Mercantile & Land Co., capital stock \$125,000, incptd. by O. M. Bilharz, Philip N. Moore, H. J. Cantwell and others.

Mo., Webb City.—Lead and Zinc.—Jim Smith Mining Co., capital stock \$10,000, incptd. by R. C. English, Jas. M. Smith and E. M. Drummond.

Mo., Webb City.—Lead and Zinc.—Onamena Mining Co., capital stock \$40,000, incorporated by Geo. J. Kutterer, Thos. H. Noonan and B. D. Talcott.

Okla., Leedy.—Zinc.—Leedy Oklahoma Zinc Co., capital stock \$50,000, incptd. by B. W. Poswell, P. M. Childress and L. A. Childress of Leedy and J. Cumbee of Atlanta, Ga.

Okla., McAlester.—Oklahoma Mining & Stripping Co., capital \$25,000, incptd. by P. R. Allen and W. H. Clayton, Jr., both of McAlester, and W. D. Leonard of Kansas City, Mo.

Tenn., Ducktown.—Copper.—Tennessee Copper Co., 2 Rector St., New York, will, it is reported, install additional unit to increase capacity from one-half to one-third sulphuric acid; reported as now producing 1000 tons daily and needing additional output to meet contract said to have been secured to furnish large amount sulphuric acid annually to E. I. Du Pont de Nemours Powder Co. of Wilmington, Del.; not now prepared to make any statement relative to these reports.

Tenn., New Market.—Zinc.—American Zinc Co. of Tennessee, Knoxville, purchased Roseberry zinc property from Graselli Chemical Co., Cleveland, O., and will develop; repair present equipment and install 400-ton mill.

Va., Blacksburg.—Mill Stones.—Brush Mountain Mill Stone Co., capital \$5000, incorporated; D. R. Jones, Pres., Cambria, Va.; R. B. Shelor, V.-P., Merrimac Mines, Va.; V. C. Austin, Secy.-Treas., Blacksburg.

Va., Mineral.—Pyrites.—Jewel Pyrites Mining Co. organized; Samson Smith, V.-P.; will develop 342 acres pyrites ore land; daily output 300 tons; will install 60 H. P. boiler, pump, 25 H. P. hoisting engine, etc. (See Machinery Wanted, Boiler, Pump, Engine.)

MISCELLANEOUS CONSTRUCTION

Ga., Augusta.—Wharf.—City has plans and specifications for wharf and concrete warehouse; appropriated \$50,000; Nisbet Wingfield, Supt. of Public Works. (Noted in Feb.)

La., New Orleans.—Levee.—Government will construct following work on Mississippi River: Southern Pacific R. R. terminal to U. S. Naval Station, 5th Dist., right bank of river, new levee, length 692 ft., contents 11,720 cu. yds.; Aurora Levee, 5th Dist., right bank river, length 5600 ft., contents earthwork 10,000 cu. yds., sheet piling (standard interlocking wood sheet piling, Martinez type) 5600 lin. ft., about 336,000 ft. B. M. reinforced concrete revetment or facing, about 30,000 sq. yds.; Upper Stanton, 5th Dist., right bank river, river side enlargement, length about 1913 lin. ft., contents 22,000 cu. yds. earth; filling in borrow pits, U. S. Government depot to lower end of Audubon Park, 6th Dist., left bank river, length about 5036 lin. ft., contents 86,000 cu. yds. earth; Levee Commrs. New Orleans Levee Dist., Suite 201 New Orleans Court Bldg., receive bids until June 22; C. J. Donner, Secy. (See Machinery Wanted, Levee Construction.)

Miss., Bay St. Louis.—Filling.—City will complete filling, by suction dredge, behind seawall along water front; Jcs. Cazeneud receives bids until July 2; R. L. O'Brien, Clerk Bond Com. (See Machinery Wanted—Filling.)

Miss., Senatobia.—Levee.—Tate County Supervisors will construct levee across Arkabutla Bottom at Blackburne Bridge crossing; bids until July 5; J. A. Wooten, Clerk. (See Machinery Wanted—Levee Construction.)

Miss., Vicksburg.—Levee.—Third Mississippi River Dist., P. O. Box 404, will construct about 519,000 cu. yds. levee enlargement; bids until June 26. (See Machinery Wanted.)

Mo., Kansas City.—Dike.—Government let contract Kansas City Bridge Co. at \$75,350 to construct about 5500 ft. standard 3-row timber dike on Missouri River about 6 mi. below Waverly. (Call for bids lately noted.)

N. C., High Point.—Tunnel.—North Carolina Traction Co., B. D. Hammond, Gen. Mgr., P. O. Box 21, Sta. A, Boston, will construct 600-ft. tunnel. (See Bridges, Culverts, Viaducts.)

N. C., Wilmington.—Fishing Pier.—Carolina Beach Fishing Pier incptd. by A. W. Pate, W. E. Yopp, J. C. Herring and J. J. Loughlin; plans to build fishing pier at Carolina Beach.

S. C., Charleston.—Dock.—Government will construct creosoted timber wharf at site of new Lighthouse Depot on Ashley River; length 520 ft.; width 50 ft.; H. L. Beck, Lighthouse Inspector, receives bids until July 15. (See Machinery Wanted—Dock Construction.)

Tenn., Memphis.—Levee.—Mississippi River Com., 1st and 2d Dists., Room 20 Custom-house, will construct about 700,000 cu. yds. levee work in Lower St. Francis Levee Dist.; bids until June 26; E. M. Markham, Maj., Engrs. (See Machinery Wanted—Levee Construction.)

Tex., Abilene.—Natatorium.—R. H. Locke has contract at about \$1200 to construct cement work on Fair Park natatorium; capacity 400,000 gals.; water discharged from pool to be used to irrigate Fair Park; M. L. Waller & Co., Abilene, prepared plans. (Noted in April.)

Tex., Orange.—Wharves and Docks.—City votes July 20 on \$25,000 bonds for wharves and docks and street improvements. Address The Mayor.

Va., Luray.—Retaining Wall.—E. C. Harnsberger, Pres. and Treas. Page Milling Co., proposes construction of proposed terrace retaining wall 3 ft. 6 in. high (above grade) and 400 ft. long; steel reinforcement, etc. (See Machinery Wanted—Retaining-wall Materials.)

W. Va., Bluefield.—Swimming Pool, etc.—Appalachian Power Co. is reported as interested in erection of swimming pool and bathhouse; pool 75x100 ft., varying in depth from 2 to 12 ft.; concrete construction.

MISCELLANEOUS ENTERPRISES

Ark., Little Rock.—Optical.—Castleberry-Brahams Co., capital \$10,000, incptd.; C. E. Castleberry, Pres.; Jack Brahams, V.-P.; Mary H. Brahams, Secy.-Treas.

Ark., Piggott.—Publishing.—Clay County Progressive Publishing Co., capital \$5000, incptd.; E. W. Thornton, Pres.

D. C., Washington.—Engineering.—Federal Systems Corp., 614 2d St. N. W., incptd.; Ernest E. Gill, Pres.; Helene S. Greenfield, V.-P. and Secy.; Louis P. Spollin, Gen. Mgr., Los Angeles, Cal.

Ga., Americus.—Incinerator.—City contemplates building garbage-disposal plant. Address The Mayor.

Ky., Louisville.—Water.—National Pure Water Co., capital \$60,000, incptd. by A. C. Guy, L. T. Jones and Logan N. Rock.

Ky., Louisville.—Engineering.—West Engineering Co., capital \$5000, incptd. by Wm. M. West, Leon P. Lewis and Irvin Marcus.

Ky., Louisville.—Engineering.—West Engineering Co., capital stock \$5000, incptd. by Wm. M. West, Irvin Marcus and Leon P. Lewis.

Mo., Hannibal.—Plumbing Supplies.—McNally-Rebenn Plumbing Supply Co., capital stock \$50,000, incptd. by Jas. E. McNally, Theo. G. and Raymond G. Rendlen.

Mo., Kansas City.—Laundry, etc.—De Luxe Laundry, Dyeing & Cleaning Co., capital stock \$4000, incptd. by H. W., W. A. and M. A. Connor.

Mo., Kansas City.—Construction.—Mathews Construction Co., capital stock \$2000, incptd. by J. A. Jackson, S. J. Mathews and R. B. Caldwell.

Mo., Kansas City.—Tripure Water.—Kansas City Tripure Water Co., capital \$50,000, incorporated by Mason G. Smith and others; office at 1314 Walnut St.; Evert Gillette, Engr.; plans to expend \$10,000 for installation 1200-gal. daily capacity tripure water-distilling plant; has building.

Mo., St. Louis.—Plumbing.—H. F. Kilpatrick Plumbing Co., capital stock \$10,000, incptd. by John J. Malone, H. F. Kilpatrick and John M. Wheelan.

Mo., St. Louis.—Bakers' Supplies, etc.—W. E. Beckmann Bakers & Confectioners' Supply Co., capital stock \$50,000, incptd. by W. E. Beckmann, Louise E. Beckmann and Louis Aleweil.

N. C., Newsom.—Contracting.—Rhyolitic Contracting Co., capital stock \$25,000, incptd. by Leon P. Tobin, H. C. Morris, T. L. Brooks and Chas. Paul.

N. C., Winston-Salem.—Grain Elevator.—Farmers' Union Agency Co. let contract T. A. Butner to erect grain elevator and warehouse; 3 stories; 100x125 ft.; height 32 ft.; concrete, frame and stucco; shingle roof; city water, sewer and electric light connections; estimated cost, \$12,000.

N. C., Winston-Salem.—Wheat Bins.—Southside Roller Mills will build 4 circular wheat bins; concrete; diam., 9 ft.; height, 32 ft.; connected to main building by cup elevators; capacity, 15,000 bu. each; let contract to Chicago company.

Okla., Bethany.—Publishing.—Bethany Publishing Co., capital \$2500, incptd. by C. B. Widener, J. H. Jamison, A. C. Smith and others.

Tenn., Columbia.—Abattoir.—Columbia Ice Co. let contract W. T. Willerford to build concrete slaughter-house.

Tex., Austin.—Fire and Police-alarm System.—City voted \$25,000 bonds for automatic fire and police-alarm system. A. P. Woolbridge, Mayor. (Lately noted.)

Tex., Dallas.—Laundry.—Stier Laundry, capital stock \$10,000, incptd. by C. F. Keating, C. H. Ivers and J. N. Stier.

Tex., Plainview.—Cattle.—Enochs-Gist Cattle Co., capital stock \$40,000, incptd. by I. C. Enoch, E. G. Flowers and J. M. Gist.

Va., Roanoke.—Opticians.—Roanoke Optical Co., capital \$10,000, incptd.; G. C. Holcomb, Pres.; A. L. Hughson, V.-P.; F. A. Shaver, Secy.-Treas.

Va., Abingdon.—Mineral Water.—Bromine-Arsenic Springs Co., capital \$50,000, incptd.; R. C. Copenhaver, Pres.-Treas.; E. P. Kiazol, V.-P.; E. W. Potts, Secy.

Va., Danville.—Laundry.—John T. Walton will install steam laundry at 423 Patton St.

Va., Norfolk.—Roofing Material.—Odenhal-Monks Corp., capital stock 25,000, chartered; C. A. Monks, Pres.; E. H. Odenhal, V.-P.; E. A. Odenhal, secy.-Treas.

Va., Richmond.—Greenhouse.—Ira L. Anderson will erect greenhouse; 1 story; brick and glass; cost \$4000.

Va., Richmond.—Construction.—Brown Construction Corp., capital \$25,000, chartered; Edward Shields, Pres.; E. L. De Rains, V.-P.; J. M. Turner, Secy.-Treas.

MISCELLANEOUS FACTORIES

Ala., Dothan.—Medicine.—Ford Medicine Co., capital stock \$20,000, incptd.; M. K. Ford, Pres.; S. S. Ford, V.-P.; R. Q. Nix, Secy.-Treas.

Ala., Mobile.—Shipyards.—Gulf City Shipbuilding & Drydock Co., Edward Warden Hyde, Mgr., Bath, Maine, has selected site for plant; now having plans and estimates prepared for drydock, buildings, ways, etc.; when these details have been determined amount of capital required will be decided and company organized. (Lately noted plan for organization with \$4,500,000 capitalization; plans were reported to include drydock with capacity 3800 ft.; marine railway, 500 ft.; yard, 600 ft., etc.)

Ark., Warren.—Confectionery.—Red Cross Confectionery Co., capital \$10,000, incptd. by O. H., W. T., P. V. and J. F. Thompson.

D. C., Washington.—Bag Cleaner.—Invincible Bag Cleaner Mfg. Co., capitalization \$5000, incptd. by Clarence O. Wood, 1512 N. Capitol St., and others.

D. C., Washington.—Bakery.—P. M. Dorach, 1811 7th St. N. W., opened bids to erect bakery at 637 C St.; A. M. Poynton Co., 715 14th St. N. W., Washington, low bidder at \$10,000.

Fla., Bartow.—Slicer, etc.—J. L. Ross and J. R. Spencer organized company to manufacture fruit and vegetable slicer and shredder.

Fla., Jacksonville.—Surgical Supplies.—Surgical Supply Co., Maurice Weintraub, Mgr., will establish factory; has building and will install lathes, motors, grinders, tools, etc., to manufacture and repair surgical knives, scissors, instruments, etc. (See Machinery Wanted—Aluminum, Brass, Glass, Steel.)

Ga., Atlanta.—Pinless Clothesline.—Pinless Clothesline Co., main office 514 Murchison Bank Bldg., Wilmington, N. C., incptd., capital \$15,000; T. W. Callahan, Pres. and Mgr.; Woodus Kellum, V.-P.; D. D. Walker, Secy.-Treas.; continues operation of plant at Atlanta; capacity 1400 lines per 24 hours; contemplates establishment of offices in Virginia and Kentucky.

Ky., Louisville.—Poole Manufacturing Co., capital \$30,000, incptd. by E. H. Hilpp, Fred Tross and R. O. Bailey.

La., Bogalusa.—Fiber Board.—Louisiana Fiber Board Co., G. H. Wood, V.-P. and Gen. Mgr., Monroe, Mich. (Chicago office, Fort Dearborn Bank Bldg.), is making improvements noted in Apr.; remodeling plant and installing additional machinery at cost of about \$150,000; contemplates operation by Sept.; plant investment, upon completion, about \$1,000,000.

La., New Orleans.—Asphalt.—City has plans by City Engineering Dept. for asphalt plant; daily capacity 2000 yds. W. J. Hardee, City Engineer.

Md., Baltimore.—Baking.—Ward Baking Co. let contract to Consolidated Engineering Co., 243 Calvert Bldg., Baltimore, to remodel building at 410-14 Hanover St.; cost \$5000; C. B. Comstock, Archt., 110 W. 4th St., New York.

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Md., Elkton—Conveyors.—Sims Automatic Conveyor Co. inceptd. by Clement M. Egner and others.

Md., Elkton—Aniline Products.—American Aniline Products Corp. inceptd. by Clement M. Egner and others.

Miss., Biloxi—Sweeping Compounds, etc.—Cedarite Chemical Co., E. L. Rush, Mgr., Opelousas, La., is reported to have leased Austin Bldg. and to equip to manufacture sweeping compound and disinfectants.

Miss., Cleveland—Bottling.—Cleveland Bottling Works organized; W. H. Fincher, Jr., Prest.-Mgr.; J. L. Fincher, Secy.-Treas.; has purchased and will install bottling equipment; W. H. Fincher, Jr., lately reported as to install bottling machinery. (See Machinery Wanted—Bottles, Cases, etc.)

Mo., Carthage—Shoes.—W. J. Davis of Owensville, Mo., contemplates building shoe factory.

Mo., Joplin—Shoes.—W. J. Davis, shoe and harness manufacturer, Owensville, Mo., plans to establish shoe factory on larger scale; considering Joplin and Carthage, Mo., and Effingham, Ill., as location; has considerable machinery, but will need additional equipment. (See Machinery Wanted—Shoe Machinery, etc.)

Mo., Kansas City—Paint.—Campbell Glass & Paint Co. will erect building to contain factory equipment, offices and store; 50x115 ft.; 7 stories and basement; reinforced concrete, faced with brick and terra-cotta.

Mo., Kansas City—Mechanical Equipment. J. A. McBride Mechanical Equipment Co., capital stock \$16,000, inceptd. by J. A. McBride, E. V. Sullivan and C. G. Van Horn.

Mo., Kansas City—Trunks.—National Trunk Co., capital \$3000, inceptd. by Fred J. Theisen, Edward F. Rose and Jas. R. Nave.

Mo., St. Louis—Coffee.—Scudders-Gale Grocer Co., 12th and Poplar Sts., asks prices on machinery for lately noted coffee-roasting plant and other equipment to be installed in new \$120,000 building now under construction. (See Stores, under Building Contracts Awarded; also Machinery Wanted—Roasters (Coffee), etc.)

N. C., Lincolnton—Creamery.—Lincoln Co-operative Creamery, D. S. Shields, Secy., Box 25, capital stock \$100,000, will establish lately noted creamery; will erect ordinary construction building; plans not decided; private bids.

N. C., Wilmington—Pinless Clothesline.—Pinless Clothesline Co., 514 Murchison Bank Bldg. (lately noted inceptd.), has main office in Wilmington, but operates plant in Atlanta. (See Ga., Atlanta.)

Okl., Oklahoma City—Films.—Mid-Western Film Mfg. Co., capital stock \$50,000, inceptd. by R. L. Smith, L. P. Arnold and G. B. Hale.

Okl., Tulsa—Fly and Insect Powder.—Hofstra Fly & Insect Destroying Co., capital stock \$6000, inceptd. by Edward C. Hofstra, Cora Hofstra and John A. Haver.

Okl., Tulsa—Roofing.—Standard Roofing & Material Co., capital stock \$50,000, inceptd. by R. T. Courtney and J. R. Startzell of Muskogee and I. V. Gray of Kansas City, Mo.

Tenn., Knoxville—Confections.—Littlefield & Steere Co. will build plant; 4 stories and basement; 87x100 ft.; brick; cost \$30,000.

Tenn., Lexington—Well Strainers.—Jones Strainer Mfg. Co. (lately noted inceptd.), capital stock \$5000 organized; W. L. Moore, Prest.; W. W. Sweett, V.-P.; W. R. Holland, Secy.-Treas.; E. Jones, Mgr.; open bids July 1 on fireproof building, size not decided, and on machinery to cost \$2500. (See Machinery Wanted—Strainers (Well) Machinery.)

Tenn., Nashville—Inked Fabrics.—B. D. Emanuel & Co. of Muncie, Ind., are reported to establish plant to manufacture ribbons for typewriters, adding machines, etc.

Tenn., Nashville—Advertising Specialty.—Auto Advertising Co., capital stock \$100,000, inceptd. by J. H. Howe, Geo. L. Parker, Harry S. Stokes and T. M. McCarley.

Tex., Denton—Creamery.—J. B. Hobson, Dr. F. J. Craddock and others interested in establishment of creamery.

Tex., El Paso—Creamery.—El Paso Ice & Refrigerator Co., plans to build creamery.

Tex., Galveston—Shipyard.—Galveston Drydock & Construction Co. organized by J. P. McDonough and others; applied to City Com. for 50-year lease on 600-ft. frontage on channel by depth of 1300 ft. on dike as site for marine railway, drydocking and ship-building plant; will guarantee to expend \$100,000 within 2 years and \$150,000 within 5 years; if lease is granted, plans to build 1600-ton marine railway, 2500-ton floating drydock capable of handling vessels of 300-ft. length, and shipbuilding stocks; dock

will be about 110 ft. wide, making possible increase of lifting capacity to 3000 tons.

Tex., Virden, P. O. at Littlefield—Tractors, etc.—Piasa Tractor Co. organized; M. S. Falmer, Prest.-Mgr., Littlefield; M. P. Glaze, Treas., Sweetwater, Tex.; will erect 100x50-ft. light steel-frame and sheet-iron building on concrete piers, about 50 workmen's cottages, etc., all fireproof, costing about \$40,000; install machinery for light machine shop; product to be tractors, gasoline engines up to 40 H. P., irrigation plants using windmills, etc. (Lately noted.)

Va., Hopewell—Bottling.—Hopewell Bottling Co., capital \$15,000, inceptd.; Wm. Davis, Prest.; M. Levin, V.-P.; Chas. D. Kanter, Secy.-Treas.; all of Petersburg, Va.

Va., Richmond—Bottling.—Crystal Bottling Works, capital stock \$35,000, inceptd.; L. W. Dalton, Prest.; A. G. Dalton, V.-P.; G. L. Dalton, Secy.; A. Mayo, Treas.

Va., Winchester—Fruit Products.—National Fruit Products Co. of Alexandria plans to build cider, vinegar and evaporating plant.

W. Va., Wheeling—Stogies.—M. Marsh & Sons, Inc., increased capital stock from \$100,000 to \$200,000.

MOTORS AND GARAGES

Ala., Ensley—Automobiles.—Tri-City Auto & Electric Co., capital stock \$3000, inceptd.; J. R. Boggs, Prest.; Paul Fontille, V.-P.; Ben P. Fontille, Secy.-Treas.

D. C., Washington—Garage.—Sterrett & Fleming let contract to M. A. Weller, 629 F St. N. W., Washington, to erect garage at 2155 Champlain St.; 115x120 ft.; reinforced concrete and brick; slag roof; heat; electric light; cost \$30,000; plans by owners.

Ga., Atlanta—Garage.—Mrs. Lucy T. Candler will erect brick-veneer garage, barn and servants' house; cost \$3000.

Md., Baltimore—Garage.—J. L. Muller, 430 S. Highland Ave., has plans by J. Stickroth for garage at 2330-6 McElderry St.; 65x118 ft.; brick; slag roof; cost \$4000; construction by owner.

Md., Frederick—Garage.—Dr. A. L. Pearre will build fireproof garage; Kenner & Smith, Archts.; H. W. Hagan, Contr.

Mo., Kansas City—Assembling Plant.—Ford Motor Co. (main office, Detroit, Mich.) has plans by Albert Kahn, 58 Lafayette Bldg., Detroit, for addition to plant at 11th St. and Winchester Ave.; 3 stories; 125x400 ft.; brick, terra-cotta and reinforced concrete; cost \$350,000. (Noted in May.)

Mo., Kansas City—Automobiles.—Gate City Motor Co., capital stock \$10,000, inceptd. by H. P. Sutton, J. R. Castor and W. C. Riggs.

Mo., Macon—Automobiles.—All-Steel Motor Co., St. Louis, acquired Brees Buggy Co. and will manufacture motor cars.

N. C., Asheville—Automobiles.—Asheville Motor Car Co., capital \$20,000, inceptd. by Paul Roebing, Thos. A. Jones and R. R. Williams.

Okl., Muskogee—Automobiles.—Muskogee Overland Co., capital stock \$2500, inceptd. by Harry F. Egan, Jerrie McCluskey and John W. Goodwin.

Okl., Oklahoma City—Garage.—Roy Hoffman let contract Stewart & Wilderson of Oklahoma City to build garage; 2 stories; 24x20 ft.; cost \$2000; plans by Maurice Jayne, Oklahoma City.

Okl., Tulsa.—Johnson & Hurley have plans for garage and store building. (See Stores.)

Tenn., Columbia—Garage.—J. O. Parks let contract to Richardson Lumber Co. to erect garage; brick; concrete floor; iron roof.

Okl., Vinita—Garage.—John A. Wise and H. E. Bagby are having plans prepared for garage; 100x150 ft.

Tex., McKinney—Garage.—J. R. Gough will erect building to be occupied by C. J. Smith as garage; 42x100 ft.; brick.

W. Va., Wheeling—Garage.—Pollach estate will erect garage on 14th St.; contractor, F. M. Martin.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

La., Kentwood—Kentwood & Eastern Ry., Geo. A. Keyes, Gen. Mgr., will rebuild machine shop reported burned at estimated loss of \$15,000.

Tex., Cleburne—Gulf, Colorado & Santa Fe Ry., F. Merritt, Ch. Engr., Galveston, is reported as contemplating installation of machinery at Cleburne shops, including 15 H. P. motor, 22-inch by 12-foot engine lathe; twist drill wet grinder, 4-inch pipe-threading machine, 28-inch rigid turret lathe, etc.; also

as planning to install 24-inch crank shaper and 26-inch by 14-foot engine lathe at Galveston. (Noted in April under Galveston as planning expenditure of \$300,000 for improvements in Texas.)

Tex., Galveston—Gulf, Colorado & Santa Fe Ry., F. Merritt, Ch. Engr., Galveston, is reported planning to install 24-in. crank shaper and 26-in. by 14-ft. engine lathe. (See Tex., Cleburne.)

ROAD AND STREET WORK

Ala., Anniston—Calhoun County Comms. will engage engineer to survey road through mountains between Anniston and Heflin; cost to be divided between Calhoun and Cleburne counties.

Ala., Birmingham—City and County Engrs. will survey 3 routes for highway between Birmingham and Warrior River; after route is decided will promote bond issue for construction; Julian Kendrick, City Engr.; Geo. Clark, County Engr.

Ala., Birmingham—City Com. adopted ordinance providing for improvements on 4th Ave.; estimated cost, \$1500.

Ala., Fayette—Fayette county will gravel part of Fayette and Tuscaloosa Rd.; expenditure, \$4616.26; County Comms. receive bids until July 6; W. S. Kellar, State Highway Engr., Montgomery. (See Machinery Wanted—Road Construction.)

Ala., Huntsville—Madison County Comms. will construct model State highway over Big Cove Mountain; let contract at \$11,500.

Ark., Searcy—County Comms., J. A. Marsh, County Judge, authorized establishment of Pangburn Road Improvement Dist. No. 2, comprising 8000 acres, including Pangburn; will construct 2 macadam roads, each 7½ mi. long.

Fla., Bradentown—Manatee County Parish Road and Bridge Dist. votes July 19 on \$110,400 bonds for road and bridge improvements. Address County Comms.

Fla., Bradentown.—City votes in July on \$8000 bonds to grade streets. Address The Mayor.

Fla., Brooksville.—City will pave Main St. Address The Mayor.

Fla., DeLand.—Volusia county, Daytona Special Road and Bridge Dist., J. D. Maley, Commr., voted previously-noted \$400,000 bonds to construct about 50 mi. brick, concrete, asphalt or macadam road, with bridges; preliminary engineering work completed by C. M. Rogers, Daytona, Fla. (Test bids on materials, etc., lately noted.)

Fla., DeLand.—Volusia county, DeLand Dist., votes July 13 on \$350,000 bonds for road construction. Address County Comms.

Fla., DeLand.—Volusia county, Orange City Dist., votes July 13 on \$80,000 bonds to construct roads. Address County Comms.

Fla., Lake City.—City canceled bids for paving; will postpone action until after county bond election on July 8; estimated cost, \$20,000; A. S. Miller, Engr.; Guy Gillen, Mayor. (Call for bids lately noted.)

Fla., Miami.—City will pave Miami Ave. for 1¼ mi.; width, 16 ft.; cost \$15,000 to \$20,000. B. H. Klyce, City Engr.

Fla., St. Petersburg.—City will pave 9th Ave. south from 8th to 9th St. and 8th St. to 10th Ave.; Dr. J. G. Bradshaw, Mayor.

Fla., Tavares.—Lake County Comms. let contract to Continental Public Works Co., 2 Rector St., New York, to construct 30 mi. sand-asphalt road, using Aztec natural asphalt, and completing work in 175 working days; J. B. McCrary Co., Engr., 1408 Third National Bank Bldg., Atlanta. Bids lately noted.)

Fla., Wauchula.—City will pave principal business streets with brick. Address The Mayor.

Fla., Winter Park.—City will curb East Park Ave. from Henkel Block to Lincoln Ave.; bids until July 13; also build cement sidewalks; bids until same date; Percy Dale, Clerk. (See Machinery Wanted—Paving.)

Ga., Atlanta.—City let contract Jameson Hollowell to pave Grant St. with wood blocks; cost \$20,000.

Ga., Folkston.—Charlton county contemplates voting on about \$100,000 bonds for roads and schools. Address County Comms.

Ga., Macon.—City will pave about 15 streets with concrete, including sections of Vineville Ave., Forsyth, Plum, Pine and other streets; C. M. Preston of Macon is lowest bidder and will probably receive contract. D. S. Jones, Clerk. (Call for bids lately noted.)

Ga., Thomasville.—City will vote on bonds to pave sidewalks, improve water and light

plant, build ice plant and erect auditorium. Address The Mayor.

Ga., Trenton.—Dade County Comms., J. H. Wheeler, Chrmn., will let contract about July 1 to construct previously-noted Chattanooga-Birmingham Rd. through Dade county; 24 mi.; Engr., Edw. E. Betts Engineering Co., 703 James Bldg., Chattanooga, Tenn.; part graded, part macadam road; \$60,000 available.

Ky., Carlisle.—Nicholas County Fiscal Court rejected bids to construct section of Carlisle and Sharpsburg Turnpike. (Noted in April.)

Ky., Hopkinsville.—Christian county road construction, contract lately noted let to C. D. McQuary, Adams, Tenn., calls for about 10 mi. resurfacing and new roads; cost about \$40,000; J. R. Dillemann, Engr.

Ky., Lagrange.—Oldham county will construct road from Crestwood to Buckner, 4.6 mi.; W. D. Pinkston, County Clerk, receives bids until June 25. (See Machinery Wanted—Road Construction.)

Ky., Lexington.—City will pave S. Broadway and Angliand St. Address The Mayor.

Ky., Louisville.—City will pave various streets, including sections of Griffiths Ave., 38th St., Coral Ave., Main St., etc.; Board of Public Works, Roger G. McGrath, Secy., receives bids until June 23. (See Machinery Wanted.)

Ky., Maysville.—City, W. L. Glazier, City Engr., let contract to Ruh & Schmidt Co. and John Exterkamp, Covington, Ky., and Farrow & Co., Maysville, to construct brick paving. (Bids lately noted on 38,000 sq. yds. paving and 19,500 lin. ft. concrete curb.)

Ky., Mount Vernon.—Rockcastle County Fiscal Court will expend \$100,000 (bonds previously noted voted) to construct roads and bridges; date of opening construction bids not set; J. Boggs, Engr., Richmond, Ky.

Ky., Vanceburg.—Lewis county rejected previously-noted bids for road improvements; readvertises bids; Ivan W. Sanders, Road Engr., Vanceburg.

La., Lake Charles.—Calcasieu Parish Highway Dept. let contract Warren Dredging Co. at about \$17,000 to construct road (by fill) through swamps to Westlake. This work in connection with Calcasieu River bridge. (See Bridges, Culverts, Viaducts.)

La., New Orleans.—Port Comms., Ernest M. Loeb, Prest., will pave with small granite blocks on 6-in. concrete base roadway approaches at foot of Clouet and Desire Sts.; bids until June 23; Engr., J. Devereux O'Reilly, Suite 200 New Orleans Court Bldg. (See Machinery Wanted—Paving.)

La., New Orleans.—City plans expenditure \$1,500,000 for street paving and accompanying improvements; to be contracted for during 1915 and work begun in January; city engineering department now giving attention to plans and specifications; in charge of E. E. Lafaye, Commr.

La., New Orleans.—City will pave with small granite block on 6-in. concrete base roadway along crown of levee from Barracks St. to Esplanade Ave.; Port Comms., Suite 200 New Orleans Court Bldg., receive bids until June 23; Engr., J. Devereux O'Reilly, Suite 200 New Orleans Court Bldg. (See Machinery Wanted.)

Md., Baltimore.—City let contract No. 118 to Patrick Flanagan & Sons, 120 E. Lexington St., at \$53,790 to pave with sheet asphalt Lombard St. from Exeter to Washington St., and Washington St. from water front to Fayette St. (Call for bids lately noted.)

Md., Baltimore.—City will pave Camden St. from Paca to Eutaw; granite block; 1850 sq. yds.; contract No. 119; also pave Tyson St. from Saratoga to Center and from Monument to Richmond; Hargrove Alley from Federal to Trenton St.; Hunter Alley from Read to Preston St.; Trenton St. from Hargrove Alley to Calvert St., and alley south of Monument St. from Howard to Tyson St.; all with vitrified block; 9100 sq. yds.; bids until June 23; R. Keith Compton, Chrmn. Paving Com. (See Machinery Wanted—Paving.)

Md., Baltimore.—City will oil about 4.9 mi. of macadam roads at Loch Raven; contract No. 42, Improvement of Gunpowder Supply; bids until June 16; Robt. L. Clemmitt, Acting Water Engr. (See Machinery Wanted—Road Oiling.)

Md., Frederick.—Frederick County Comms., John W. Holter, Prest., will build section State-aid highway, about 1.04 mi., through town of Brunswick and on Brunswick-Petersville Rd.; bids until July 3. (See Machinery Wanted—Road Construction.)

Miss., Gulfport.—Harrison County Supvs. will construct beach road from Gulfport to Biloxi.

Miss., Hazlehurst.—Copiah county, Dist. 5, will open bids July 5 to construct gravel roads; \$150,000 available; Xavier A. Kramer, Engr., Magnolia, Miss.; previously noted. (See Machinery Wanted—Road Construction.)

Miss., Meridian.—Lauderdale county voted \$50,000 bonds to connect improved roads in county with paved streets in city. Address County Commrs. (Lately noted.)

Miss., Vicksburg.—City let contract to V. T. Zollinger, Vicksburg, to construct 1 mi. concrete sidewalks; Dr. W. J. Hossley, official in charge; C. R. Twiss, Engr. (Bids lately noted.)

Miss., West Point.—Clay County Supvrs. Dist. No. 2 issued \$20,000 for road construction; L. J. Howard, Clerk Board of Improvements.

Mo., Jackson.—Cape Girardeau County Commrs. have plans and specifications for road construction to cost \$9377; probably secure \$4688.50 from State road fund.

Mo., Joplin.—City Com. let contract E. O. Moats to pave Joplin St. from 4th to 6th St. with 3½-in. wood blocks; 2-in. concrete base; also let contract J. F. Frye to construct concrete curb and gutters on Sergeant Ave. from 1st to 10th St.

Mo., Kansas City.—City will pave 75th St. from Wornall Rd. to State line; let contract Foxhall McCormick.

Mo., Lebanon.—City will construct macadam and concrete paving; bids opened. Address The Mayor.

N. C., Dobson.—Surry county, Dobson township, voted lately noted \$30,000 bonds to construct roads; J. B. Sparger, Chrmn., County Commrs.

N. C., Gastonia.—Gaston county votes Aug. 3 on \$150,000 bonds, \$100,000 of which will be expended for road construction and improvement and \$50,000 to refund indebtedness.

S. C., Anderson.—Southern Public Utilities Co. let contract W. W. Johnson of Anderson to pave between street-car tracks.

S. C., Chesterfield.—Chesterfield county, Jefferson township, voted \$25,000 bonds to construct roads. Address County Commrs.

Tenn., Bristol.—Board of Mayor and Commissioners adopted ordinances authorizing \$13,500 bonds to build concrete streets in Holston Heights Improvement Dist.

Tenn., Chattanooga.—Lookout Mountain Pike Com., H. F. Lawrence, Chrmn., let contract at \$100,755.97 to McIsaac-Gentry Co. of Chattanooga to construct Wauhatchie Pike, beginning at St. Elmo Ave. and crossing Lookout Mountain to bridge across Lookout Creek; concrete roadway with heavy rock cuts and fills; length 2.13 mi.; width 20 ft.; include culverts, walls, etc.; \$150,000 available; L. B. Bryan, County Engr. (Call for bids lately noted.)

Tenn., Elizabethton.—Carter county votes July 5 on \$300,000 bonds to construct roads. Address County Commrs.

Tenn., Knoxville.—City let following contracts, totaling \$111,005.44, for street paving: Cumberland Ave. district—Paving, Murray Construction Co., \$37,989.58; storm sewers, Curran-Morgan-Roehl, \$4997.30; curb, Murray Construction Co., \$2310; total cost \$45,288.38; Callaway Ave. district—Paving, Murray Construction Co., \$18,364.50; storm sewers, Curran-Morgan-Roehl, \$2343; curb, Thos. McFarland & Son, \$1458; total \$22,165.50; Atkin St.—Paving, Murray Construction Co., \$18,480; storm sewers, Curran-Morgan-Roehl, \$1996.50; curb, Thos. McFarland & Son, \$1467.20; total cost \$21,943.70; Anderson St. district—Paving, Murray Construction Co., \$11,580.20; storm sewers, Curran-Morgan-Roehl, \$4639.25; curb, McFarland & Son, \$755.40; total \$17,004.85; Highland Ave. district—Paving, Murray Construction Co., \$4232.47; curb, McFarland & Son, \$370.54; total \$4603.01; all of Knoxville; Anderson St. to be paved with bituminous macadam with Mexican asphalt binder; other districts to be paved with Trinidad asphalt on 5-in. concrete base; total length of improvement districts 9200 ft.; J. B. McCalla, City Engr. (Call for bids lately noted.)

Tenn., Maryville.—Blount county's \$300,000 bond issue has been declared illegal; R. P. McReynolds, Chrmn. Finance and Revenue Comm. (Previously noted.)

Tenn., Sweetwater.—City, W. T. Lenoir, Mayor, will vote July 22 on \$15,000 bonds for street improvements. (Lately noted.)

Tex., Austin.—City voted \$425,000 bonds to improve streets; A. P. Wooldridge, Mayor. (Lately noted.)

Tex., Ballinger.—Runnels county voted special tax to construct roads. Address County Commrs. (Lately noted.)

Tex., Dallas.—Southern Methodist University, R. S. Hyer, Prest., will construct grading on campus to cost \$5000; walks, \$2000; paving, \$56,000. (See Water-Works.)

Tex., Galveston.—City will pave Ave. A from intersection with 29th and 37th Sts.; 663 sq. yds. vitrified brick pavement, 88 cu. yds. extra concrete and 248 lin. ft. concrete bulkheads; City Commrs. receive bids until June 24; H. O. Sappington, Commr. of Streets and Public Property; A. T. Dickey, City Engr. (See Machinery Wanted—Paving.)

Tex., Houston.—Harris county will grade Middleton Rd. north about 3 mi. from Crosby Rd. to Bayou; H. L. Washburn, County Auditor, receives bids until June 21. (See Machinery Wanted.)

Tex., Orange.—City votes July 20 on \$325,000 bonds for street improvements and municipal wharves and docks. Address The Mayor.

Tex., Seymour.—City voted to construct sidewalks. Address The Mayor.

W. Va., Charleston.—Kanawha county 6 Magisterial Dist. voted \$375,000 bonds for road construction as follows: Jefferson Dist., \$85,000; Charleston Dist., \$80,000; Union Dist., \$50,000; Malden Dist., \$45,000; Pocahontas Dist., \$25,000; F. G. Burdett, County Road Engr. (Lately noted.)

W. Va., Elkins.—City appropriated \$40,000 for street paving. Address The Mayor.

W. Va., Moundsville.—Marshall county will grade and macadamize Fairmont Pike in Union Dist. as far as \$50,000 will complete same; bids until June 17; T. J. Bartrug, Engr., Alexander Bldg.; J. E. Chase, County Clerk. (See Machinery Wanted—Road Construction.)

W. Va., Pineville.—Wyoming county votes June 28 on \$550,000 bonds to construct roads. Address County Commrs.

W. Va., Spencer.—Roane county, Duval Dist., voted \$100,000 bonds to construct roads. Address County Commrs.

SEWER CONSTRUCTION

Ala., Orrville.—City contemplates constructing sewer system and water-works. Address The Mayor.

Fla., Miami.—City let contract Duval & Ashworth to construct sewer on Ave. B, Ave. J, 7th St., etc.

Ga., Cartersville.—City will vote on \$85,000 bonds for sewer system and other improvements; adopted plans by J. B. McCrary Co., Atlanta, Ga.

Ga., Macon.—City let contract H. B. Hoppenditzel Co. to construct sewer main 1½ mi. long through property of Suburban Realty Co.

Ky., Madisonville.—Board of Public Works will construct 8666 ft. sanitary sewers; bids until July 1; plans and specifications by J. M. Flanagan. (See Machinery Wanted—Sewer Construction.)

Md., Baltimore.—City let contract Carozza Bros. & Co., 606 Munsey Bldg., at \$76,797.70 to construct lateral sewers east and south of Patterson Park, and at \$37,654.40 to construct section 2 of Ferry Point Interceptor, sanitary contract No. 154. (Call for bids lately noted.)

Miss., Meridian.—City contemplates \$10,000 bond issue for sewer construction. Address The Mayor. (See Bridges, Culverts, Viaducts.)

Miss., Philadelphia.—City voted \$30,000 bonds to construct sewerage plant and water-works. Address The Mayor.

Mo., Kirksville.—City will construct system of storm sewers in Joint Storm Sewer Dist. No. 3; 257 lin. ft. 36-in., 640 ft. 30-in., 485 ft. 24-in., 540 ft. 18-in., 595 ft. 15-in., 565 ft. 12-in., 600 ft. 10-in. storm sewers, with manholes, catch-basins, etc.; bids until June 28; C. E. Murrell, Mayor; C. V. Downing, Engr. (See Machinery Wanted—Sewer Construction.)

Okla., Tulsa.—City will construct complete sanitary sewer system, including inlets, manholes, etc., in Sewer Dist. No. 98; interior diam. 8 in.; bids at office City Auditor until June 17; T. C. Hughes, City Engr. (See Machinery Wanted.)

Tex., Austin.—City voted \$50,000 bonds to construct sanitary sewers; A. P. Wooldridge, Mayor. (Lately noted.)

Tex., Beeville.—City votes July 12 on \$15,000 bonds to extend sewer system; 25,670 lin. ft.; estimated cost, \$16,000; Consult. Engrs., Bartlett & Hanney, San Antonio. (Lately noted.)

Tex., West.—City will vote in July on \$12,000 bonds to construct sewer system in business section. Address The Mayor.

Va., Dayton.—City, J. L. Fuqua, Mayor, will construct previously-noted sewers; bids until June 22. (See Water-Works. See Machinery Wanted—Water-works, Electric-light Plant and Sewers.)

TELEPHONE SYSTEMS

Va., Lynchburg.—Chesapeake & Potomac Telephone Co. is reported to expend \$25,000 for improvements, including underground conduits.

Va., Claudeville.—Three Fork Telephone Co. increased capital stock from \$5000 to \$10,000.

TEXTILE MILLS

Miss., Clarksdale.—Cotton Pickery.—Mr. Malone of Malone & Kessler and others are interested in erection of cotton pickery; building to cost \$5000; Percy Chamberlain, Mgr.

N. C., Franklinville.—Cotton Goods.—Franklinville Mfg. Co. increased capital stock from \$30,000 to \$130,000.

N. C., Granite Falls.—Cotton Yarn.—D. H. Warlick, Secy. Dudley Shoals Cotton Mills Co., plans organization company to build 5000-spindle cotton-yarn mill.

N. C., Laurinburg.—Cotton Goods.—R. E. Lee plans organization \$200,000 to \$300,000 company to build cotton mill; brick buildings, 15,000 spindles, electric power, etc., proposed. (Lately noted interested in plan for cotton mill.)

N. C., Wilmington.—Cotton Goods.—Delgado Cotton Mills let contract R. H. Brady at \$2300 to erect addition to finishing department; 2 stories; brick.

S. C., Anderson.—Cotton Cloth.—Equinox Mill will expend \$25,000 to \$30,000 for improvements lately noted; will build cloth room, cloth storage warehouse and 25 cottages and install electric-light plant; let electric-lighting contract to Southern Public Utilities Co., Anderson; no other contracts let; J. E. Shirrine, Greenville, S. C., Engr. for Equinox Mill.

WATER-POWER DEVELOPMENTS

Ala., Birmingham.—City Commrs. adopted resolution instructing Julian Kendrick, City Engr., to furnish report as to practicability and probable cost of constructing power plant on Warrior River at Lock 16 or 17. (Lately noted.)

N. C., Spring Hope.—Eastern Carolina Light & Power Co. will construct hydro-electric plant on Tar River 3 mi. from Spring Hope, and electrical transmission systems to Bailey, 13 mi.; Middlesex, 13 mi.; Zebulon, 13 mi.; Dunn, 6 mi.; Nashville and Spring Hope; will develop 2000 H. P. ultimately; first installation to be 250 H. P. unit.

WATER-WORKS

Ala., Orrville.—City contemplates constructing water-works and sewer system. Address The Mayor.

Ark., Berryville.—City will drill deep well for water-works. Address The Mayor.

Fla., Bradentown.—City votes in July on \$21,000 bonds to extend water-works. Address The Mayor.

Fla., Bradentown.—City votes in July on \$4000 bonds to drill larger well for water-works. Address The Mayor.

Tex., Ennis.—City let contract Chicago Bridge and Iron Works of Chicago at \$4190 to erect 100,000-gal. water tower.

Fla., New Smyrna.—City let contract J. S. Schofield's Sons Co., Macon, Ga., for 75,000-gal. tank on 75-ft. tower, in connection with water-works; J. B. McCrary Co., Engr., Atlanta, Ga. (Lately noted.)

Fla., Pensacola.—City voted \$20,000 bonds to erect building at water plant. Address The Mayor. (Lately noted.)

Ga., Athens.—City let contract to New York Continental Jewell Filtration Co., New York, for lately-noted filter; capacity 500,000 gals.; cost \$5000; wood construction; J. W. Barnett, Engr.

Ga., Bozerville, P. O. Lindale, Ga.—Jas. J. Skelton, Lindale, contemplates erection of small water system; plans to erect 10,000-gal. cypress tank, sink well, install oil engine and pump, and about 2500 ft. galvanized pipe.

Ga., Stone Mountain.—City defeated lately-noted bonds for water-works and school improvements.

Ga., Tallapoosa.—City votes June 29 on lately-noted \$35,000 bonds for water-works; will purchase private plant and expend \$10,000 on improvements. Address The Mayor.

Ga., Thomasville.—City will vote on bonds to improve water-works, etc. Address The Mayor. (See Road and Street.)

Ky., Ft. Thomas.—City is prepared to grant water-works franchise. Address Winston J. Ross, Secy. City Council. (See Machinery Wanted—Water-works Franchise.)

Ky., Harlan.—W. H. Hunter of Elizabethton, Tenn., will build water-works and ice plant; estimated cost, \$50,000.

Md., Frederick.—City plans construction of pipe line from Fishing Creek to city water mains to improve water supply. Address The Mayor.

Miss., Philadelphia.—City voted \$30,000 bonds to construct water-works and sewerage plant. Address The Mayor.

Tenn., Bellbuckle.—City votes July 10 on \$25,000 bonds to construct or purchase water-works system. Address The Mayor.

Tex., Columbus.—City voted \$9000 bonds to improve water-works; wooden water mains and additional hydrants. Address The Mayor. (Noted in April.)

Tex., Dallas.—Southern Methodist University let contract to Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., for 100,000-gal. steel tank for lately-described water-works to be constructed at cost of \$45,000; Myers & Noyes, Engrs., 403 Juanita Bldg., Dallas; university's plans for this and other work in near future include sewer laterals (contract let), \$7000; grading on campus, \$5000; water mains, \$9000; walks on campus, \$2000; paving, \$56,000; artesian well, etc., \$30,000; gas, \$15,000; concrete bridges, \$6000.

Tex., Honey Grove.—Holts Heights Water Co. let contract Shirley Bros. to erect brick pumping station. (Lately noted.)

Tex., Kenedy.—City has \$35,000 available for expenditure on contemplated water-works construction; P. R. Goff, Mayor.

Tex., Temple.—City let contract P. G. Burns of Houston at \$16,460 to construct concrete dam and spillway over Leon River for water-works. (Lately noted.)

Va., City Point.—City Point Water Co., capital \$50,000, inceptd.; Richard Eppes, Prest., Petersburg; Mary Eppes, V.-P., and Sam W. Zimmer, Secy., both of City Point.

Va., Covington.—City voted \$25,000 bonds (lately noted) to purchase site and construct reservoir, lay additional mains, extend water system, etc.; reservoir to the concrete line, 2 compartments, with capacity 2,000,000 gals.; receive bids until July 12 to furnish materials and construct reservoir, supply cast-iron pipe, etc.; Harry Stevens, Consult. Engr., Union Trust Bldg., Washington, D. C.; plans and specifications at Engineer's office and office of Town Clerk; copies forwarded upon request to Engineer; E. B. Butler, Mayor. (See Machinery Wanted—Water-works Construction, etc.)

Va., Dayton.—City, J. L. Fuqua, Mayor, will construct water-works, electric-light plant and sewers; bids until June 22; \$24,500 previously noted voted. (See Machinery Wanted—Water-works, Electric-light Plant and Sewers.)

WOODWORKING PLANTS

Ala., Birmingham.—Wagons, etc.—Cruse-Crawford Co. is having plans prepared by W. T. Warren of Birmingham for plant; brick; half 1 story and half 2 stories; about 100x140 ft.; estimated cost \$25,000.

Tex., Texas City.—Handles.—Gor Bros. will build handle factory; frame; 40x100 ft.; daily capacity 200 doz. shovel handles; machinery ordered; estimated cost plant \$25,000.

Va., Mineral.—Furniture.—Mineral Furniture Co., capital \$5000, inceptd.; H. W. Payne, Prest.; Mrs. Ethel A. Payne, V.-P.; N. C. Coyner, Secy.-Treas.

Va., West Point.—Furniture.—J. L. Baldwin is interested in organization of company with \$35,000 capital stock to build furniture factory; site, 4 acres.

FIRE DAMAGE

Ala., Florala.—Warehouse occupied by E. G. Hoover & Co. and Hoover-Doster Co., and owned by J. F. Hughes of Electric Mills, Miss.

Ark., Cotton Plant.—Harry Barnett's residence; loss \$4000.

Fla., Jacksonville.—Florida Soap Factory.

Fla., Key West.—Principe de Golfo cigar factory, owned by A. Aurelio Torres; building was owned by John Lowe, Jr.

Fla., Marianna.—Building occupied by Marianna Bakery and Empire Furniture Co., and other buildings.

Ga., Vienna.—Residences of D. C. Ketcham, Mrs. M. Bullard, W. S. Reese, J. B. Ryner, Mrs. M. R. Hobbs and R. C. Wells; estimated loss, \$15,000.

Ga., Whitesburg.—Methodist Church. Address The Pastor.

Ky., Murray.—Melvin Hill's residence, owned by John Parks.

Ky., Owensboro.—Furman Cravens' residence; loss \$4000.

La., Kentwood.—Kentwood & Eastern Ry.'s machine shop; estimated loss \$15,000; Geo. A. Keyes, Gen. Mgr.

Md., Salisbury.—Jacob Hudson's residence; loss about \$5000.

Miss., Meridian.—E. M. Culpepper's store on 4th St.; estimated loss \$5000.

Miss., Tenmile.—Tenmile Lumber Co.'s drykill.

N. C., Wendell.—O. G. Paul's store; Wendell Times' Bldg.

N. C., Winston-Salem.—J. W. Whitaker's residence at 631 Buxton St.

S. C., Greenville.—A. C. Rose's residence on Hampton Ave. ext.

S. C., McBee.—Dr. J. D. Ingram's building, occupied by McBee Supply Co. and others.

S. C., Manning.—E. C. Gross' dwelling; loss \$3300.

S. C., Coosawhatchie.—R. T. W. Roberts & Son's store building; loss \$10,000.

Tex., Dickinson.—Building occupied by Dickinson State Bank and League City Telephone Co.'s exchange; loss \$3000.

Tex., Elmo.—R. Robinson's residence; loss \$3000.

Tex., Houston.—T. E. Dickey's building; loss \$7000.

Tex., LaPorte.—Quick Service Garage, building owned by Martha Benson estate, loss \$8000; Isensee Bldg., loss \$3000; James Sullivan's hotel, loss \$4500; E. P. Seureau's store, loss \$3000.

Tex., Milano.—L. H. Sparra's building; loss \$3500.

Tex., Moody.—Gormany Bros.' water-works, ice plant and reservoir; estimated loss \$15,000.

Va., Norton.—Norton Coal Co.'s powerhouse; estimated loss \$25,000.

Mo., Joplin.—First Baptist Church, Rev. O. P. Bishop, pastor, selected A. C. Michaelis, Joplin, as architect for proposed \$50,000 building; 70x135 ft.; 3 stories; 35 rooms and auditorium to seat 1000; pipe organ.

Mo., New Franklin.—Evangelical Immanuel congregation, Rev. Benj. F. Freese, pastor, will erect building; 36x60 ft.; brick; creosoted shingle roof; inclined double floor; hot-air furnace; cost \$2000; John E. Meyers, Archt., Booneville, Mo.; bids opened June 17. Address Ernest Howelmann, New Franklin. (Lately noted.)

N. C., Winston-Salem.—Reformed Church is having plans prepared by D. Hall Crews, Winston-Salem, for building; 1 story and basement; arrangements for Sunday-school and social activities; brick and stone construction; slate roof; cost about \$15,000. (Humphreys & Faw lately incorrectly reported preparing plans.)

Tenn., Chattanooga.—Pilgrim Congregational Church plans to erect building; J. E. Annis, D. M. Steward and others, Com.

Tenn., Cookeville.—Presbyterian Church, U. S. A., contemplates erecting manse. Address The Pastor.

Tenn., Kingsport.—M. E. church, Rev. A. B. Moore, pastor, has plans by Charley B. Mitchell, Johnson City, Tenn., to erect building on Broad St.; cost \$19,000 to \$12,000; bids opened. Address J. W. Dobyns, Kingsport. (Lately noted.)

Tenn., Knoxville.—First Baptist Church, Rev. Len G. Broughton, pastor, is reported to erect addition to building.

Tex., Houston.—First Presbyterian Church will erect building at Central Park. Address The Pastor.

Va., Rural Retreat.—Methodist church, Dr. Wm. G. Delp, Clerk, is having plans prepared by G. R. Ragan, Roanoke, Va., for building; plans ready in about 10 days; ordinary construction, metal shingle roof; rift pine floors; hot-air heat; electric lighting. Address Dr. Delp.

Va., Staunton.—First Presbyterian Church, Rev. A. M. Fraser, pastor, has plans by Jas. M. McMichael, Trust Bldg., Charlotte, N. C., and Herbert L. Cain, Main Street Bank Bldg., Richmond, Va., to remodel church and erect Sunday-school building; portion of side walls to be remodeled and main auditorium to be enlarged; will install storm doors, windows, hardwood floors, electric lights, heating system; Sunday-school to contain assembly hall to seat at least 400, 25 classrooms, pastor's study, etc.; heating plant 2 stories below level of street.

W. Va., Clarksburg.—United Brethren Church, W. M. Slaughter, pastor, has plans by S. W. Ford, Clarksburg, for building on Duff St.; 52x94 ft.; cement sidewalks; other details not determined; reported cost, \$25,000; construction to begin about July 1.

CITY AND COUNTY

Ark., Booneville.—Jail.—Logan County Commissioners have \$8000 appropriation to erect jail.

Fla., Pensacola.—Truckhouse.—City voted \$10,000 bonds to erect truckhouse. Address The Mayor. (Lately noted.)

La., New Orleans.—Warehouses, etc.—Board of Commrs. of Port of New Orleans receives bids until July 21 to construct reinforced concrete buildings for cotton warehouses and terminals. (See Warehouses.)

Miss., Meridian.—City Hall, Jail and Stable. City plans to issue \$40,000 bonds to erect city hall, jail and city stable. Address The Mayor.

Miss., Pass Christian.—Jail, etc.—City will issue \$21,000 bonds for jail and fire-department improvements and \$9000 for city-hall improvements. Address The Mayor. (Lately noted.)

Miss., Wiggins.—Town Hall and Jail.—Town receives bids until June 22 to erect town hall and jail. Address Town Clerk.

Mo., Joplin.—Library.—City will erect addition to Carnegie Library at 9th and Wall Sts.; 2 stories and basement; cost \$25,000. Address The Mayor.

N. C., Burlington.—City Hall.—City voted \$10,000 bonds to erect city hall. Address The Mayor. (Lately noted.)

Okla., Bristow.—City Hall.—City will erect city hall; assembly-hall to seat about 1200; Chas. A. West, Pres., City Council Com.

Okla., Tulsa.—Library.—G. R. McCullough, Chrmn. of Building Com., First National Bank, receives bids until June 26 to erect Carnegie Library according to plans by J. W. Hawk, Tulsa; separate bids for heating and plumbing; plans and specifications at office of Mr. McCullough. (Previously noted.)

S. C., Greenwood.—Theater and Association.—Mayor Hartzog appointed Aldermen

Crymes, Coleman and others to confer with People's Trust Co. relative to erection of building for Y. M. C. A. and theater. (See Theaters.)

Tenn., Nashville.—Asylum.—Davidson County Commrs. have \$75,000 appropriation for 2 wings on central building of Davidson County Asylum; windows to have steel framework set in steel facings; floors of compressed cork; Edw. Dougherty, Archt., Candler Bldg., Atlanta, Ga.

Tex., Dallas.—Jail.—City plans to erect jail on city barn property. Address The Mayor.

Tex., Temple.—Fire Department.—City voted \$30,000 bonds to erect and equip fire-department building and \$10,000 bonds for fire-alarm system. Address The Mayor. (Lately noted.)

COURTHOUSES

Ky., Lawrenceburg.—Anderson county opens bids June 22 to erect courthouse; fireproof, ordinary and mill construction; concrete slab floor; gravity steam heat; cost \$30,000 to \$35,000; Joseph & Joseph, Archts., Louisville. (Noted in May.)

S. C., Greenville.—Greenville County Courthouse Com. selected P. Thornton Marye, Atlanta, Ga., architect for courthouse, for which \$80,000 is available; H. Olin Jones, Supervising Archt., Greenville. (Lately noted.)

W. Va., Charleston.—Kanawha County Commissioners have plans by David Dick, Charleston, for addition to courthouse; cost \$50,000.

DWELLINGS

Ala., Tuscaloosa.—J. D. McQueen is having plans prepared by D. O. Whildin, Birmingham, Ala., for residence; rock veneer and stucco; cost \$5000.

Ark., Little Rock.—P. L. Johnson will erect 2-story frame residence at 2514 Battery St.; cost \$3000.

D. C., Washington.—J. Edw. Chapman has plans by N. T. Haller, 211 McLachlen Bldg., Washington, for dwelling on 16th St.

D. C., Washington.—Cornelia S. Aldis is reported to erect dwelling on R St. near Connecticut Ave.

D. C., Washington.—Harry A. Kite, 1333 G St. N. W., has plans by A. E. Landvoigt, 713 14th St. N. W., Washington, for 7 dwellings at 25-37 16th St. S. E.; 15 and 14.6x6 ft.; brick; slag roof; electric light; cost \$10,500; construction by owner.

D. C., Washington.—John L. Knopp, 1929 Jackson St. N. E., will erect 2 dwellings at 1825-7 Lawrence St. N. E.; 24x28 ft.; frame; slate roof; hot-water heat; electric light; cost \$4000; plans and construction by owner.

D. C., Washington.—Henry P. Fairbanks has plans by Waddy B. Wood, 816 Connecticut Ave., Washington, for dwelling on F St. between 23d and 24th Sts.; 60x65 ft.; 4 stories; brick; brick limestone trim; cost about \$50,000; bids due June 16. (Noted in April.)

Fla., Jacksonville.—John A. Fuller will erect residence; 1 story; brick veneer; cost \$3100.

Fla., Orlando.—B. Beecham is having plans prepared by Murray S. King, Orlando, to remodel residence; buff colored brick veneer, with white trim; red slate roof.

Fla., Tampa.—Wm. Silver will erect residence at Gray and Westland Aves.; cost \$3000.

Ga., Atlanta.—J. D. Rhodes will erect residence on Pace's Ferry Rd.; Henty & Reed, Archts., Candler Bldg., Atlanta.

Ga., Atlanta.—Mrs. Lucy T. Candler will erect servants' house, etc. (See Motors and Garages.)

Ga., Forsyth.—Mrs. W. H. Ashworth, Nashville, Ga., will erect dwelling on Railroad Av.

Ga., Savannah.—Mrs. John Morris will erect residence at 24th and Abercorn Sts.

Ky., Hickman.—W. T. Griscom will erect 2-story brick store and residence.

Ky., Louisville.—Nich Vogt will erect brick-veneer dwelling at 1227 Cherokee Rd.; cost \$6000.

Ky., Louisville.—B. E. Weber will erect 2 frame cottages at 425-27 Camp St.; cost \$5600.

Ky., Louisville.—Nora S. Lindsay will erect brick-veneer dwelling at 2904 S. 3d St.; cost \$4250.

Ky., Louisville.—W. F. Krebs will erect brick-veneer dwelling at 1607 Jaeger St.; cost \$3200.

Ky., Middlesboro.—E. H. Tamer will erect 5-room brick bungalow.

La., New Orleans.—General Realty Co., A. H. Johness, Pres., acquired Highland

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—P. K. Chaconas, 943 Massachusetts Ave., will erect apartment-house to cost \$7500; bids being received.

Mo., Kansas City.—C. C. Peterson will erect 8-apartment flat at 1905 E. 14th St.; cost \$9500.

Mo., St. Louis.—Theodore Degenhardt Building & Contracting Co. will erect tenement-house at 2327 Minnesota St.; 25x54 ft.; mill construction; composition and gravel roof; wood and tile floors; \$600 heating plant; \$150 lighting plant; sidewalks to cost \$200; plans and construction by owner. (Lately noted.)

Tex., El Paso.—Holland Thomas will erect store and apartment-house. (See Stores.)

Tex., El Paso.—Perry-Kirkpatrick Co. will erect store and apartment-house. (See Stores.)

Tex., El Paso.—Mayfield Building & Improvement Co. will erect brick apartment-house in Munday Heights; 27x33x26 ft.; cost \$3900.

Tex., El Paso.—R. I. Rushing, 2901 Magnolia St., will erect apartment-house on San Antonio St.; 20 apartments; ordinary construction; asphalt and gravel roof; oak floors; steam heat; cost \$35,000; Gibson & Robertson, Archts., El Paso; construction by owner; lately noted. (See Machinery Wanted.)

Va., Abingdon.—H. H. Scott, Belmont Hotel, will erect apartment-house.

Va., Richmond.—Bertha W. Smith will erect apartment-house at 2500 Monument Ave.; 2 stories; brick; estimated cost \$39,000.

ASSOCIATION AND FRATERNAL

Fla., Jacksonville.—Lodge No. 221, B. P. O. E. G. D. Ackerly, Secy., plans to remodel clubhouse and erect addition; cost \$20,000.

S. C., Greenwood.—Mayor Hartzog appointed Aldermen Crymes, Coleman and others to confer with People's Trust Co. relative to erection of Y. M. C. A. and theater. (See Theaters.)

Tex., El Paso.—Y. M. C. A. is reported as probably to erect addition to building.

BANK AND OFFICE

Ky., Ashland.—Second National Bank is receiving bids through Weber, Werner & Adkins, Archts., 1206 Mercantile Library Bldg., Cincinnati, to erect 4-story building; cost \$80,000.

Mo., Kansas City.—Campbell Glass & Paint Co. will erect store, office and factory building. (See Miscellaneous Factories.)

S. C., Anderson.—G. H. Bailes & Co. are reported having plans prepared by C. G. Sayre, Anderson, for improvements to building occupied as offices by Piedmont & Northern Lines; will provide front, hardwood floors, steam-heating plant, etc.; cost about \$5000.

Okla., Sand Springs.—Sand Springs State Bank will erect building; 55x125 ft.

Okla., Tulsa.—Isenbach, Stebbins & Giddings have plans for office and business building. (See Stores.)

Tenn., Nashville.—Sixth Ave. Property Co. is having plans prepared for office, theater and store building. (See Theaters.)

Tex., Galveston.—L. S. Green, Archt., 1111 American National Insurance Bldg., receives bids until July 5 to erect 6-story fireproof office building; plans and specifications on application.

Va., Clintwood.—Dickenson County Bank, W. W. Pressley, Cash., appointed Mr. Pressley, Dr. N. B. French and J. F. Trivitt committee to contract for erection of bank building.

Va., Hopewell.—J. F. Sachs and B. Forman, Roanoke, Va., are reported to erect office building.

Va., Lynchburg.—A. Humbles will erect store and office building. (See Stores.)

CHURCHES

Ark., Berryville.—Presbyterian church will erect building. Address The Pastor.

Ky., Lexington.—Central Christian Church will remodel main auditorium and vestibules; fronts of interior facing pews will be redesigned, new organ installed, sanitary cork carpet installed, etc.; Frank Bedford, Archt., Lexington.

Ky., Lexington.—Broadway Christian Church is reported to erect building. Address The Pastor.

Ky., Louisville.—Bethlehem Evangelical Church is having plans prepared by Gray & Wischmeyer, 1417 Starks Bldg., Louisville, for building at 6th and Hill Sts.; 50x100 ft.; reinforced concrete; fireproof floors; tile roof; steam heat; cost about \$30,000; bids opened about August 1. (Lately noted.)

Ky., Hopkinsville.—John Galsford, Memphis, Tenn., prepared plans for church building; Tudor Gothic style; stone construction; cost about \$55,000; Rev. Lewis Powell, pastor.

Ky., Lexington.—John Galsford, Memphis, Tenn., is preparing plans for brick church; classic style; cost \$14,000.

Ky., Scottsville.—First M. E. Church has plans by R. E. Turbeville, Noel Block, Nashville, Tenn., for building; 76x96 ft.; composition roof; wood-joist floor; cost about \$14,000; warm-air heat, \$600; bids opened June 17; address architect. (Lately noted.)

Ky., Scottsville.—Baptist church has plans by R. E. Turbeville, Noel Block, Nashville, Tenn., for building; 64x75 ft.; ordinary construction; wood floor; warm-air heat; cost \$10,000; address Architect. (Lately noted.)

Ky., Winchester.—John Galsford, Memphis, Tenn., is preparing plans for church; Tudor Gothic style; pressed brick; cost about \$51,000.

La., New Orleans.—Canal Street Presbyterian Church will erect Sunday-school annex; also reported as probably to erect church building. Address The Pastor.

Md., Frostburg.—Salem Reformed Church receives bids through Geo. F. Sansbury, Archt., Cumberland, Md., until June 29 to erect building; plans and specifications at office of architect; 45x60 ft.; ordinary construction; slate roof; wood floors on steel beams; cost \$10,000; steam heat, \$7000. Address Archt.

Farms Co.'s property in Jefferson county; will establish model farm, erect residence, etc.

La., New Orleans.—W. D. Pritchett will not erect dwelling at this time as lately noted.

La., Shreveport.—C. L. Ratcliffe is erecting dwelling; 60x80 ft.; brick; tile roof; wood, concrete and tile floors; gas grates; cost \$15,000; E. A. George, Archt., Shreveport, La.; no contract—owner sublets each line. (Lately noted.)

Md., Baltimore.—Thos. Campbell reported to erect 2 dwellings on Kate Ave.

Md., Baltimore.—M. Fillmore Carter will erect 50 dwellings at Hilton and Franklin Sts.; 2 stories; 16x55 ft.; brick and frame; tin roof; hardwood floor; hot-water heat; gas and electric light cost about \$150,000; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore; plans to ultimately erect about 300 dwellings on recently-acquired tract at that location.

Md., Chevy Chase.—Wm. L. Hillyer has plans prepared by John M. Donn, 1516 H St. N. W., Washington, D. C., for dwelling on Quincy St.; 2 stories; 32x75 ft.; brick; slate roof; Georgia pine floors; hot-water heat; electric light; cost about \$16,000; bids due June 25. (Noted in May.)

Md., Roland Park.—Chas. Hogendorp, Jr., 2824 Maryland Ave., Baltimore, will erect dwelling on Merrymount Rd.

Md., Roland Park.—Wm. H. Ritter, Baltimore, has plans by Clyde N. Friz, 1523 Munsey Bldg., Baltimore, for dwelling on Roland Ave. near St. Johns Rd.; 37x45 ft.; 2 stories; frame, shingle exterior; slate roof; hardwood floor; hot-water or steam heat; electric light; cost about \$9000; bids due June 21. (Lately noted.)

Miss., Clarksdale.—M. Powers will erect 2 dwellings; 36x40 ft.; mill construction; shingle roof; wood floors; electric lighting; cost \$3000 each; steam heat, \$450; M. M. Alsop, Archt., West Point, Miss. Address Owner. (Lately noted.)

Mo., Kansas City.—Julia Cantrell will erect 2-story dwelling at 24 E. 53d St.; cost \$4000.

Mo., Kansas City.—W. F. Toller will erect 2-story dwelling at 918 W. 34th St.; cost \$3500.

Mo., Kansas City.—G. P. Tebbenkamp will erect two 2-story dwellings at 3706-10 Benton St.; cost \$5000.

Mo., Kansas City.—T. J. and J. J. Green will erect three 1-story dwellings at 2020-2-4-6 Ward Ave.; cost \$6000.

Mo., Kansas City.—Stella Case Humphrey will erect 2-story dwelling at 20 E. 53d St.; cost \$4000.

Mo., Kansas City.—James Flannagan will erect 3 two-story dwellings at 4110-12-14 Holly St.; cost \$6750.

Mo., Kansas City.—J. O. Cooper will erect 2-story dwelling at 3726 Benton Blvd.; cost \$3000.

Mo., Kansas City.—J. E. Knaus will erect 2-story dwelling at 3227 Karnes St.; cost \$5000.

Mo., Kansas City.—Chas. E. Hiseil will erect 4 one-story dwellings at 4201-3-5-7 Park Ave.; cost \$4000.

Mo., University Sta., St. Louis.—Samuel S. Pomeroy will erect 3 dwellings at 7050-52-56 Berlin St.; stucco or brick, with stone trimmings; 7 rooms; sleeping porches; completion by Aug. 15.

N. C., Charlotte.—J. Arthur Henderson will erect residence in Myers Park.

N. C., Charlotte.—R. L. Vernon will erect residence in Myers Park.

N. C., Durham.—Daniel W. Horton will erect residence on Liberty St.

N. C., Wilmington.—Henry Heyer will erect 5-room residence on Bladen St.; cost \$3500.

N. C., Wilmington.—James Howard of Howard & Wells is erecting 2-story bungalow at Sunset Park; cost about \$5000; completion by Sept. 1.

N. C., Winston-Salem.—Dr. J. Benbow Whittington is having plans prepared by D. Hall Crews, Winston-Salem, for dwelling; 2 stories; frame; cost about \$3500.

Okla., Oklahoma City.—Hazel Campbell will erect 2-story frame residence at 3201 Classen Blvd.; cost \$5000.

Okla., Oklahoma City.—A. C. Plage will erect dwelling at 1439 W. 34th St.; cost \$3000.

Okla., Oklahoma City.—John McClelland will erect dwelling at 309 W. 17th St.; cost \$6000.

Okla., Oklahoma City.—Paul Stone will erect 2-story frame residence at 1313 N. Shartel Ave.; cost \$4000.

Okla., Tulsa.—F. M. McFarlin is having plans prepared by Geo. Winkler, Tulsa, for dwelling on S. Carson St.; 80x75 ft.; ordinary construction; tile roof; wood floor; hot-water heat; cost about \$35,000; bids opened Aug. 1. Address Archt.

Okla., Tulsa.—A. E. Lewis has plans by Geo. Winkler, Tulsa, for dwelling on S. Boulder St.; 80x36 ft.; ordinary construction; tile or slate roof; hardwood floor; hot-water heat; electric light; cost about \$30,000; bids opened about July 15. Address Archt. (Noted in May.)

S. C., Anderson.—Equinox Mills will erect 25 cottages. (See Warehouses.)

S. C., Camden.—Dr. R. E. Stevenson will erect dwelling; 8 rooms; shingle roof; hardwood and pine floors; grates; electric lighting; cost \$5000; C. C. Wilson, Archt., Columbia, S. C.; construction to begin about July 1. Address Owner. (Lately noted.)

S. C., Charleston.—Geo. P. Murphy will erect dwelling at 71 Charlotte St.; cost \$4000.

S. C., Greenwood.—G. W. Hart will rebuild burned dwelling; cost about \$2200; J. E. Summer, Archt., Greenwood.

S. C., North Augusta.—A. T. Taylor plans to erect 2-story 10-room residence; cost about \$4500.

S. C., North Augusta.—H. R. Walker is erecting 2 five-room bungalows; cost about \$5000.

Tenn., Athens.—J. C. Reed will erect 2 cottages.

Tenn., Athens.—George Stephens will erect 7-room residence.

Tenn., Jonesboro.—Sam Chase will erect dwelling.

Tenn., McKenzie.—Ed. Montgomery of Montgomery & McDonald is erecting 10-room residence on Forrest Ave., National Hill.

Tenn., McKenzie.—Jeff Blanks of Jeff Blanks Department Store is erecting cottage.

Tenn., Nashville.—A. J. Hullebrand is preparing plans for 2-story brick-veneer residence on 17th Ave.; cost \$5000.

Tenn., Nashville.—Dr. Geo. Hale has plans by Edward E. Dougherty, 1033 Candler Bldg., Atlanta, for residence; 36x66 ft.; brick veneer, plastered; California red wood roof; Broomell vapor heat; cost \$10,000; bids reported opened June 12. (Lately noted.)

Tenn., Nashville.—W. L. Horn has plans by R. E. Turbeville, Nashville, for dwelling in Belmont Heights; 30x48 ft.; brick veneer; composition shingle roof; wood floor; cost \$3000; warm-air heat, \$125; subcontracts to be let by owner, who may be addressed. (Lately noted.)

Tex., Beaumont.—W. C. Josey and J. H. Phelan acquired 4 lots and will erect colonial residences.

Tex., Beaumont.—S. G. Burnett will erect residence at Franklin St. and Ave. E; cost \$12,000.

Tex., Dallas.—F. J. Steer will erect two 5-room frame cottages at 911-15 Fitzhugh St.; cost \$3000.

Tex., Dallas.—W. A. Thomas will erect 2-story 8-room frame residence at 3725 Holland St.; cost \$3000.

Tex., El Paso.—Mayfield Building & Improvement Co. will erect 14 dwellings; 5 to 9 rooms; brick; wood shingle and composition roofs; hardwood floors; cement sidewalks; cost \$3000 to \$7000 each; hot-air heating, \$150 to \$200, and hot water, \$300 to \$500; plans and construction by owner. (Lately noted to erect 2 dwellings.)

Tex., El Paso.—Geo. W. Sharp will erect 2 brick bungalows in Cotton and Bassett additions; cost \$6000.

Tex., Galveston.—A. Lerner will erect two-story dwelling at 2106-08 Avenue I.

Tex., Galveston.—H. J. A. Bockman will erect cottage.

Tex., Galveston.—W. R. Scrimgeour will erect 2-story frame dwelling.

Tex., Galveston.—B. E. Harriss is having plans prepared by C. D. Hill & Co., Dallas, for residence at 30th St. and Broadway; 2 stories; brick veneer; cost \$15,000.

Tex., San Antonio.—D. W. Gregory will erect 5-room dwelling on 10th St.; cost \$3000.

Va., Graham.—Will Wilson of Abbs Valley will erect residence.

Va., Norfolk.—W. J. Smith will erect 2-story residence at 228 E. 28th St.; cost \$3500.

Va., Norfolk.—A. H. Garrett will erect 2-story frame residence at 217 34th St.; cost \$3000.

Va., Norfolk.—C. E. Stephenson has plans by C. M. Major for residence; 29½x31 ft.; 2 stories and basement; 8 rooms and bath; bids opened June 19.

Va., Norfolk.—Chas. R. Robertson has plans by C. M. Major for residence on Park Pl.; 26x29 ft.; 2 stories and basement; 8 rooms and 2 baths; front and rear porches; bids opened June 19.

Va., Norfolk.—J. A. Pierson will erect residence; 2 stories; brick and frame; cost \$5000.

Va., Pulaski.—Geo. Gilmer has plans by Frank Stone, Pulaski for residence; cost \$4000.

Va., Richmond.—Savilla A. Gould will erect 2-story brick dwelling on Grove Ave.; cost \$5000.

Va., Richmond.—A. G. Quarles will erect 2-story brick dwelling on Third Ave.; cost \$8000.

Va., Richmond.—W. C. Carpenter will erect 2-story frame dwelling on First Ave.; cost \$6000.

Va., Richmond.—P. H. Poehler will erect store and dwelling. (See Stores.)

Va., Richmond.—C. L. Terrell will erect 2-story frame dwelling at 1209 3d Ave.; cost \$2900.

Va., Richmond.—R. E. M. Whitehurst will erect 2-story brick dwelling on West Ave. between Birch and Lombardy Sts.; cost \$6500.

Va., Roanoke.—C. A. Fischer is having plans prepared by Oliver Mitchell, 609 Strickland Bldg., Roanoke, for dwelling on 16th Ave. S. W.; 37x33 ft.; brick-veneered walls; slate roof; wood floors; hot-water heat; electric lighting; cost \$5000; bids opened last of June. Address Architect.

Va., Staunton.—W. C. McCormick plans to erect residence.

Va., Buckhannon.—Mrs. Maude Rietz will erect 2-story brick-veneer bungalow on Madison St.; cost \$3000; private plans.

W. Va., Wheeling.—J. D. Merriman is having plans revised by Chas. Bates, Schmutz Bldg., Wheeling, for dwelling; hollow tile and stucco; cost \$15,000.

GOVERNMENT AND STATE

D. C., Washington.—Laboratory.—Dept. of Commerce and Labor has plans by Donn & Deming, 808 17th St., Washington, for chemical laboratory for Bureau of Standards, on Pierce Mill Rd.; 66x82 ft.; fireproof; tile roof; concrete floor construction, overlaid in halls with tile, in laboratories with wood; steam heat from central heating plant; electric light; cost about \$200,000; plans completed; Govt. writing specifications, to be completed about July 1. (Noted in November.)

Mo., Webb City.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., receives bids until July 26 to erect postoffice, including mechanical equipment, lighting fixtures and approaches; 1 story and basement; 4500 sq. ft. ground area; fireproof except roof; stone facing; composition roof; drawings and specifications may be obtained from custodian of site at Webb City or at office of Acting Supervising Architect.

Okla., Bartlesville.—Postoffice.—Mair Bros. Co. and C. E. Burlingame will erect post-office building on Keeler Ave. between 3d and 4th Sts.; 1 story; 100x50 ft.; fireproof; cost about \$8000.

Okla., Oklahoma City.—Capitol.—State Capitol Com. opened bids to erect State Capitol building; Jas. Stewart & Co., 30 Church St., New York, are reported lowest bidders; cost about \$1,500,000; Layton & Smith, Archts., Majestic Bldg., Oklahoma City. (Previously noted.)

Tex., Galveston.—Courthouse, Postoffice and Custom-house.—Treasury Dept., Jas. A. Wetmore, Act. Suprv. Archt., Washington, D. C., receives bids until July 14 to remodel U. S. Courthouse (old Appraiser's Warehouse); also to remodel postoffice and custom-house; drawings and specifications at office of Mr. Wetmore at Washington, and custodians of buildings at Galveston.

Tex., Longview.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Washington, D. C., opened bids to erect post-office building; Texas Construction Co., San Antonio, is lowest bidder at \$33,030 for limestone and \$33,280 for sandstone construction. (Noted in April.)

HOSPITALS, SANITARiums, ETC.

Ark., Hot Springs.—Constructing Quartermaster, Army and Navy General Hospital, receives bids in triplicate until June 18 to erect double set of non-commissioned officers' quarters; information on application.

Ark., Little Rock.—Arkansas Confederate Home opens bids June 21 to erect hospital

annex 80x50 ft.; brick; slate roof; accommodations for 20 patients.

Ky., Covington.—Salvation Army, W. S. Barker, Property Secy., 120 W. 14th St., New York, has tentative plans by Samuel Hanna-ford & Sons, 6th and Vine Sts., Cincinnati, for Booth Memorial Hospital on E. 2d St.; 300 beds; 6 sun parlors; 6 fresh-air porches; 2 roof gardens; cost \$100,000. (Lately noted.)

Mo., Kansas City.—Hoffman Bros. have permit to erect hospital at 4909-11 E. 27th St.; cost \$9000.

Mo., Kansas City.—St. Joseph's Hospital will probably take bids in 3 weeks to erect building; fireproof; steel and concrete; brick with terra-cotta facing; 6 stories; accommodations for 250 patients; chapel 4 or 5 stories; connected to main building by tunnel; cost of both about \$400,000; Wilder & Wight, Archts., First National Bank Bldg., Kansas City. (Noted in January.)

N. C., Winston-Salem.—Twin-City Hospital Assn. is reported to erect nurses' home.

Tex., Dallas.—City will expend \$6000 to alter and repair hospital. Address The Mayor.

Va., Charlottesville.—University of Virginia will erect hospital building wing; 60x140 ft.; ordinary construction; tar and gravel roof; wood floor; central hot-water heating plant installed; cost about \$50,000; bids opened June 14; Walter D. Blair, Architect, 599 5th Ave., New York, N. Y. (Noted in April.)

Va., Fredericksburg.—Mary Washington Hospital Assn. plans to erect 2-story addition to hospital; considering tentative plans by P. N. Stern, Fredericksburg.

W. Va., Clarksburg.—Clarksburg Protestant Hospital Co., F. M. Goodman, Secy., plans to erect hospital at reported cost of about \$150,000. Secretary wires Manufacturers Record: "Not advanced far enough for information."

HOTELS

Ala., Montgomery.—Montgomery Hotel Co., Simon Gassenheimer, Prest., acquired Exchange Hotel and is reported to expend \$50,000 to remodel, refurnish and improve.

Fla., Anona.—Tampa & Gulf Coast Ry. Co., C. H. Lutz, Gen. Mgr., Ybor City, Ind. Sta., Tampa, Fla., plans to erect hotel, etc., in connection with development of resort. (See Land Developments.)

Fla., Key West.—Dr. J. B. Maloney and Philadelphia capitalists are reported promoting erection of tourist hotel.

Ky., Louisville.—Tyler Co., 825 Paul Jones Bldg., has plans by D. X. Murphy & Bro., Louisville Trust Bldg., Louisville, for 3 additional stories and 11-story addition to Tyler Hotel; addition 30 ft. wide; cost about \$200,000. (Lately noted.)

Md., Hagerstown.—T. S. Kahn and A. K. Coffman have plans by H. E. Yessler, Hagerstown, for hotel at 39 W. Franklin St.; 45x240 ft.; fireproof; roof garden; tile and wood floors; cost about \$125,000; bids opened soon. Address T. S. Kahn, W. Franklin St., Hagerstown.

Mo., Kansas City.—International Realty Associates, N. J. Upham, Prest., is reported to expend \$10,000 to \$12,000 to remodel building on E. 9th St. for hotel; 65 rooms.

Okla., Drumright.—A. J. Bell is reported to erect 3-story hotel at Broadway and Pennsylvania Aves.; brick.

Tenn., Friendship.—Dr. Frank Taylor is promoting company to erect hotel; about 20 rooms; steam heat.

MISCELLANEOUS

Ark., Texarkana.—Cafe.—Poulous Bros. will rebuild Olympia Cafe.

Fla., Anona.—Bathhouse, Dancing Pavilion, etc.—Tampa & Gulf Coast Ry. Co., C. H. Lutz, Gen. Mgr., Ybor City, Ind. Sta., Tampa, Fla., plans to erect bathhouse, dancing pavilion, etc., in connection with development of resort. (See Land Developments.)

Fla., Valrico.—Civic.—Valrico Improvement Assn. will erect civic building; 1 story; 40x50 ft.; trussed roof; brick with cement block trimming or entire structure of cement blocks. (Previously noted.)

Ga., Atlanta.—Barn.—Mrs. Lucy T. Candler will erect barn, etc. (See Motors and Garages.)

Md., Mapleville.—Home.—Home for Aged will erect addition to building at San Mar, near Mapleville; completion by Oct. 1; plans prepared.

Okla., Oklahoma City.—Drugs.—Alexander Drug Co. will erect laboratory and warehouse building. (See Buildings Proposed, Warehouses.)

Tenn., Knoxville.—Home.—Mt. Rest Home for Aged, Mrs. D. A. Plant, Pres. of Directors, plans to erect addition to building; 6 or 8 rooms; cost \$5000.

Tex., Houston.—Bathhouse.—Edward Well will erect bathhouse at Blumark Park at cost of about \$15,000, including pool already constructed; 1 story and roof garden; A. G. Finn, Archt., Houston.

RAILWAY STATIONS, SHEDS, ETC.

S. C., Anderson.—G. H. Balles & Co. are reported having plans prepared for improvements to building. (See Bank and Office.)

SCHOOLS

Ala., Bessemer.—School Board will erect 4-room addition to Roberts and Clarendon avenue schools; sold \$30,000 bonds.

Ala., Birmingham.—Birmingham College will erect \$35,000 science hall.

Ala., Girard.—City will vote on \$25,000 bonds, to include \$15,000 to erect high school; Earl Morgan, Mayor.

Ala., Huntsville.—City will vote on \$45,000 bonds to erect school previously noted; L. M. Weathers, Archt., Memphis, Tenn.

Ark., Little Rock.—School Board will erect addition to James Mitchell school; 2 stories and basement; semi-fireproof; 103x51 ft.; concrete foundation; brick and terra-cotta exterior; slate roof; cost about \$40,000; Thos. Harding, Archt., Little Rock. (Lately noted to open bids June 10.)

D. C., Washington.—Dist. Commrs. receive separate bids at office of Secy., Room 509 Dist. Bldg., until June 30 for superstructure, heating, plumbing, electrical work and radial brick stack of high school No. 174 on 1st St. between N and O Sts.; plans and specifications at office of Chief Clerk, Engr. Dept., Room 427 Dist. Bldg.

Fla., Auburndale.—Polk County Board of Public Instruction, Bartow, Fla., is having plans prepared by Fort & Poter, Lakeand, Fla., for school building; 70x90 ft.; 2 stories; ordinary construction; Barrett specification roof; cost \$10,000. (Noted in Mch.)

Fla., Brandon.—Brandon Special Tax Dist. votes July 2 on \$3000 bonds to erect school. Address Dist. School Trustees. (Lately noted at Seffner, Fla.)

Fla., Daytona.—Daytona Special Tax Dist. votes July 10 on \$50,000 bonds for schools; proposes to erect grammar schools in North and South Daytona; W. M. Hankins, Chrmn. of School Board.

Fla., Fort Pierce.—Rev. Fr. Gabriel, rector St. Anastasia's Church, indefinitely postponed erection of convent. (Previously noted.)

Fla., Gulf Point.—See Fla., Pensacola.

Fla., Lake Alfred.—Lake Alfred School Dist. voted \$4000 bonds to erect school; 2 stories; brick; 6 classrooms, auditorium, etc. Address Dist. School Trustees. (Lately noted.)

Fla., Miami.—Silver Palm School Dist. plans to consolidate 7 schools and erect central high-school building to be known as Redlands High School; considering tentative plans by August Geiger, Miami.

Fla., Ozone.—Ozone School Dist. of Pinellas County will vote on \$12,000 bonds to erect schools as follows: Ozone, \$4000; Curlew, \$5000; Wall Springs, \$3000; Mixie M. Hollis, Supt. of Public Instruction, Clearwater, Fla.

Fla., Pensacola.—Escambia County Board of Public Instruction plans to erect grammar school on Palafox St.; 10 rooms; fireproof; also erect schools at Pineville, Myrtle Grove and Gulf Point and 1-room addition to school at Bratt.

Fla., Pineville.—See Fla., Pensacola.

Fla., Port St. Joe.—Special Tax School Dist. voted \$4000 bonds to erect school building; J. D. Parish, Chrmn. School Board, Blountstown, Fla.

Fla., Safety Harbor.—Pinellas County School Board, Clearwater, Fla., has plans by Lester Avery, Clearwater, for school building; 3 stories; 58x75 ft.; ordinary construction; Ducksback metal shingle roof; cost about \$10,000; bids opened June 22. Address Archt. (Lately noted.)

Fla., Seminole.—County School Board, Clearwater, Fla., receives bids until June 22 to erect school; plans and specifications at office of Dixie M. Hollis, Supt. of Education, Clearwater, and Lester Avery, Archt., Clearwater. (Lately noted to have voted \$5000 bonds.)

Fla., St. Petersburg.—City defeated \$105,000 bonds to erect high school, for which Henry H. Dupont & Co., St. Petersburg, Fla., prepared plans. (Lately noted.)

Fla., Wall Springs.—See Fla., Ozone.

Ga., Atlanta.—Board of Education will soon let contracts for school improvements, including erection of Metta Goldsmith school to cost \$5739.30; Milton Avenue school, cost \$8889; Lucile Avenue school, cost \$20,115, etc.; lately let contracts for addition to 10th Street school and to erect East Atlanta school; June finance sheet carries \$85,000 appropriation for school improvements. (Lately noted in part.)

Ga., Folkston.—Charlton County Commrs. are considering \$100,000 bond issue for schools and roads.

Ga., Stone Mountain.—City, P. E. McCurdy, Mayor, defeated bond issue for school. (Lately noted.)

Ga., Tallapoosa.—City votes June 30 on \$30,000 school bonds. (Lately noted to vote June 29.)

Ky., Carlisle.—City votes June 21 on \$15,000 bonds to erect building. Address School Board.

Ky., Dixon.—City voted \$5000 bonds to erect school. Address The Mayor.

La., Collinston.—Directors of Public Schools of Morehouse parish, L. H. Stevens, Secy., Bastrop, receives bids at Bank of Collinston until June 22 to erect 2-story brick school; plans and specifications at office of J. W. Smith, Archt., Monroe, La.

La., Gilbert.—School Board, H. B. Womble, Pres., Gilbert, has plans by J. W. Smith, Monroe, La., for school; 64x96 ft.; ordinary construction; metal roof; wood floor; steam heat; cost \$22,000; bids opened June 26. Address Mr. Womble.

La., St. Gabriel.—Iberville Parish School Board, Plaquemine, La., receives bids until July 6 to erect frame school; plans and specifications at office of Walter Cook Keenan, Archt., 824 Gravier St., New Orleans.

Md., Baltimore.—Roland Park School, Roland Park, Md., will erect building on 40th St. between Roland Ave. and University Parkway; Wyatt & Nolting, Archts., Keyser Bldg., Baltimore.

Md., Baltimore.—University of Maryland, Lombard and Greene Sts., Dr. Arthur M. Shipley, Dean, will erect laboratory building; construction probably in fall; details and architect not decided.

Md., Baltimore.—Board of Awards opened bids to erect addition to school No. 101-111, at Caroline and Jefferson Sts.; 2 stories; brick; marble trimmings; reinforced concrete foundation; D. M. Andrew Co., Mt. Vernon Ave. and 26th St., Baltimore, is lowest bidder.

Miss., Ashland.—W. T. Renick, County Supt. of Education, receives bids until June 19 to erect brick school, with water supply, sewerage system, steam heat and light plant; bids considered on work as whole or for separate parts as above; address Mr. Renick for further information.

Mo., Webster Groves.—Loretto Sisters, 3407 Longfellow Ave., St. Louis, are reported to erect college buildings in Webster Groves.

N. C., Burlington.—City, Jas. P. Montgomery, Secy. and Treas., voted \$40,000 bonds to erect school. (Lately noted.)

N. C., Columbus.—Columbus High School Dist. voted \$10,000 bonds to erect school. Address Dist. School Trustees.

N. C., Greenville.—Town voted \$30,000 bonds to erect school; Albion Dunn, Mayor. (Lately noted.)

N. C., Kittrell.—Vance county votes about July 20 on \$15,000 bonds to erect school buildings; E. M. Rollins, Supt., Henderson, N. C. (Lately noted.)

N. C., Morganton.—Board of Education will erect school in Silver Creek township.

N. C., Mt. Airy.—Town Commrs. ordered election on \$7000 bonds to complete graded school.

N. C., Walnut Cove.—Walnut Cove Special School Tax Dist. votes July 14 on \$4000 bonds to erect school; J. G. Morefield, Clerk Board of County Commrs., Danbury, N. C.

N. C., Winston-Salem.—Forsyth County Board of Education, W. B. Speas, Supt., is considering site for school at Dennis.

Okla., Sapulpa.—City defeated \$150,000 bonds for schools. (Lately noted voted.)

Okla., Tulsa.—Tulsa School Dist. is having plans prepared by Geo. Winkler, Tulsa, for high school; 260x125 ft.; fireproof; reinforced concrete floor; fan system heat; electric light; cost about \$300,000; bids due about Sept. 1. (Noted in April.)

S. C., Bethune.—City voted \$9300 bonds to erect graded school; brick. Address The Mayor.

S. C., Greenville.—Furman University, Edwin M. Poter, Pres., will erect athletic stadium; 500x450 ft.; concrete bowl; cost \$10,000; W. L. Taylor, Archt., Greenville; date of opening bids not determined. (Lately noted.)

S. C., Sumter.—City voted \$50,000 bonds to erect school for girls and repair other structures. Address The Mayor. (Previously noted.)

Tenn., Bristol.—City contemplates voting Oct. 7 on bonds to erect high school building; Paul Hareell, Secy. Board of Education.

Tenn., Friendship.—Friendship School Dist. voted \$6000 bonds to erect school. Address Dist. School Trustees.

Tenn., Knoxville.—City plans to erect 8-room addition and otherwise improve Park City High School. Address The Mayor.

Tenn., Memphis.—Shelby County Board of Education will erect Treadwell school at Highland Heights; 2 stories and basement; brick and stone; composition roof; cost \$40,000; Mahan & Broadwell, Archts., Memphis.

Tenn., Memphis.—Goodwyn Institute, C. C. Ogilvie, Supt., opens bids June 26 for addition to building; 35 ft. deep; will provide 45 new offices, 350 to 525 additional seats in auditorium, etc.; cost \$100,000 to \$125,000; Victor Dunkerley and John Galsford, Archts., Memphis.

Tenn., Morristown.—City will erect ward school probably on 3d South St.; 8 rooms; ordinary construction; slate roof; wood floors; city lighting; cost \$15,000; hot-water heat, \$500; concrete sidewalks, \$300; Archt. not selected; date of opening bids decided in about 2 weeks. Address City Council, Recorder Stephens. (Noted in May.)

Tenn., Whiteville.—City votes July 2 on \$5000 bonds to improve schools. Address The Mayor.

Tex., El Paso.—Trustees Concordia School District No. 2 are having plans prepared for 2 schools; each 8 rooms and basement; fireproof; composition roof; cost about \$18,000; plans probably ready June 30. (Lately noted.)

Tex., Haslet.—Haslet Consolidated School Dist. votes June 30 on \$7500 bonds to erect school. Address Dist. School Trustees.

Tex., Gainesville.—Ernest E. McAnelly, Archt., 1301 Southwestern Life Bldg., Dallas, receives bids until June 21 to erect 2-story brick-veneered residence, frame dairy barn and frame stable for Texas State Girls' Training School, about 2 mi. from Gainesville; plans and specifications at office of architect and Chamber of Commerce, Gainesville; Patrick Henry, Chrmn. Board of Control. (Lately noted.)

Tex., Palestine.—City votes July 2 on \$85,000 bonds to erect high school; fireproof; address Geo. A. Wright, Mayor. (Lately noted.)

Tex., San Diego.—City voted \$18,000 to erect brick school building. (Noted in May.)

Tex., Sambo, R. D. from Abilene.—Sambo School Dist. plans election on \$3000 bonds to erect school; J. S. Smith, County Supt., Abilene, Tex.

Va., Norton.—Norton School Dist. will vote on \$12,500 bonds to erect school. Address Dist. School Trustees.

Va., South Boston.—J. O. Watson, Clerk of School Board, receives bids until June 23 to erect addition to high school; 8 rooms and basement; metal or slate roof; city lights; cost about \$15,000; plans and specifications at offices of Chas. M. Robinson, Inc., Archt., 508-12 Times-Dispatch Bldg., Richmond, Va., and 9 First National Bank Bldg., Danville, Va., and office of Mr. Watson at South Boston. (Lately noted.)

Va., Vinton.—School Board will erect school building; 10 classrooms; ordinary construction; H. W. Johns-Manville asbestos roof; maple floor; steam heat; electric light; J. T. Bandy, Chrmn., Roanoke; G. R. Ragan, Archt., Roanoke, Va., is considering bids of C. N. Howell, R. K. Stuart and O. M. Dickerson.

Va., Whaleyville.—Cypress School Board receives bids until June 24 through T. V. Arthur, R. D., Whaleyville, to erect brick school; plans and specifications at Whaleyville Bank, offices of Supt. De Jarnette, Suffolk; T. V. Arthur, Chrmn., R. D., Whaleyville, and C. E. Byrd, Clerk of Board, R. D., Holland, Va.

W. Va., Coalwood.—Board of Education, R. Moore Dodrill, Secy., will erect 4-room brick-veneer school.

W. Va., Spencer.—Spencer School Dist. voted \$35,000 bonds for schools. Address Dist. School Trustees.

STORES

Ala., Birmingham.—J. A. Vann will erect 2-story brick-veneer building.

Ala., Goodwater.—Planters' Bank has plans by Miller & Martin, Birmingham, for building; 1 story; 23x50 ft.; brick, stone and marble; cost \$3000.

Ala., Huntsville.—Miller Bros. are erecting store building on Meridian St.

Ala., Huntsville.—N. O. Pamplin is erecting store building.

Ala., Oneonta.—Dr. C. L. Stansberry has plans by F. E. Flowers, Oneonta, for store building at 2d St. and 1st Ave.; 34x75 ft.; 5-ply roofing; cement and tile floor; electric lights; cement sidewalks; contract let about Aug. 1; cost about \$3000. (Lately noted.)

Ala., Roanoke.—McMurry & Huey are erecting 3 one-story stores; plate-glass and pressed brick fronts; metal roof; day labor; E. & E. A. Zobel, Archts., Lafayette, Ala.

Ark., Argenta.—Justin Matthews, Little Rock, is having plans prepared by Mann & Stern, Little Rock, to rebuild Matthews Block on Main St.; reinforced concrete and terra-cotta; 2 stories; lower floor for stores; upper floor for apartments and offices; contract let in about 10 days; cost \$75,000. (Noted in May.)

D. C., Washington.—E. W. Hugueny opened bids to erect store and warehouse building on 11th St.; A. H. Aylor, 82 Seaton Pl. N. W., Washington, low bidder at \$7000.

Fla., Orlando.—M. A. Henkel and Walter Schultz will erect building at Park and Welborne Sts.; 2 stories; brick; 2 stores on lower floor.

Ga., Cleveland.—John L. Gaines will probably erect 2-story brick building.

Ga., Dooling.—Dr. A. H. Weathers, Pres. Weathers Banking Co., contemplates erecting 2 stores.

Ky., Hickman.—W. T. Griecom will erect 2-story brick store and residence.

Md., Baltimore.—Thos. O'Neill has plans by John K. Stack, 12 E. Lexington St., Baltimore, to remodel building at 1310 N. Charles St. for store; interior work and front; cost about \$5000; bids opened June 14.

Mo., Kansas City.—G. L. Woolfolk will erect 1-story brick store at 1502-10 Troost St.; cost \$3000.

Mo., Kansas City.—Campbell Glass & Paint Co. will erect building for stores, office and factory. (See Miscellaneous Factories.)

Mo., St. Louis.—Wm. Pickel of Pickel Realty Co. will erect business building at 3320-22 Lindell Ave.; cost \$15,000; brick; fireproof; 50x140 ft.; cost \$15,000.

N. C., Wilmington.—F. W. Woolworth Co., New York, will expend about \$3000 to repair building on N. Front St.; C. D. Hildebrand, Supt. of Construction, Wilkes-Barre, Pa.

Okla., Tulsa.—Johnson & Hurley have plans by Geo. Winkler for store and garage building at 7th and Main Sts.; 75x140 ft.; mill construction; tar and gravel roof; concrete floor; vacuum steam heat; cost about \$15,000; bids opened July 1. Address Archt.

Okla., Tulsa.—Isenbach, Stebbins & Giddings have plans by Geo. Winkler, Tulsa, for business and office building; 50x100 ft.; 2 stories; ordinary construction; tar and gravel roof; terrazzo and wood floor; vacuum steam heat; cost about \$15,000; contract let July 1. Address Archt. (Lately noted.)

S. C., Cosmawhatchee.—R. T. W. Roberts & Son will rebuild store noted damaged by fire at loss of \$10,000.

S. C., Lake City.—J. P. Mathews Co. opens bids June 18 to erect department-store building; ordinary construction; tin roof; cement floors with wood finish; electric lighting; cost \$7000; L. McD. Hicks, Archt., Florence, S. C. (Lately noted.)

S. C., Spartanburg.—J. D. Collins will erect store on Broad St.; cost \$3500.

Tenn., Nashville.—Sixth Avenue Property Co. is having plans prepared for store, theater and office building. (See Theaters.)

Tex., Dallas.—B. Crossman will expend \$5000 to alter and repair building at 1612 Forest St.

Tex., El Paso.—Holland Thomas will erect brick store and apartment-house in East El Paso; cost \$3000.

Tex., El Paso.—Perry Kirkpatrick Co. will erect brick store and apartment building to cost \$35,000; 72x120x38 ft.

Tex., Hebronville.—Oscar Thompson will erect store building.

Tex., San Antonio.—Joske Bros. Co. will expend \$3000 to alter building on Alamo St.

Va., Danville.—John Swarts will erect brick store on Patton St.; cost \$3500.

Va., Danville.—Mrs. Mary L. Nunn will erect brick building on Main St.; cost \$5000.

Va., Raphine.—F. E. Fulwider & Bro. are reported to erect building.

Va., Lynchburg.—A. Humbles will erect store and office building at 5th and Jackson Sts.; cost \$5000.

Va., Richmond.—P. H. Poehler will erect 2-story brick store and dwelling at 6 N. West St.; cost \$2500.

W. Va., Parkersburg.—Walker & Hiteshaw have plans by R. H. Adair, Parkersburg, for store and office building on Market St.; 2 stories; stone; cost \$16,000. (Lately noted.)

THEATERS

D. C., Washington.—Home Amusement Co. has plans by Wm. S. Plager, 2115 Kearney St. N. E., Washington, for motion-picture theater at 1230 C St. N. E.; 50x110 ft.; 3 stories; seating capacity of first floor, 500; fireproof; tile, stucco and marble front; concrete floor; cement and tile roof; fan system heating; electric light; cost about \$25,000; bids opened June 21. Address Archt.

Md., Baltimore.—Lord Calvert Theater Co., 701 Calvert Bldg., is having plans prepared by F. E. Torney, 813 Newington Ave., Baltimore, for motion-picture theater at Fulton Ave. and Baker St.; 37x148 ft.; seating capacity about 1200; brick.

S. C., Greenwood.—Mayor Hartzog appointed Aldermen Crymes, Coleman, Ellis and Harris to confer with People's Trust Co. relative to erection of combined Y. M. C. A. and opera-house; cost \$32,996.20; has tentative plans by T. W. Cothran, Greenwood.

Tenn., Nashville.—Sixth Avenue Property Co., care of J. H. Howe, is having plans prepared by Marr & Holman, Nashville, for theater, office and store building on 6th Ave., extending through to Capitol Blvd.; 50x150 ft.; fireproof; gravel roof; concrete floor; cost about \$5000; indirect hot-air washer-ventilating, \$6000; plans ready about July 1. Address Archts. (Lately noted.)

Tenn., Springfield.—Steve Holland, Nashville, Tenn., leased building adjoining Bonita Theater; will combine 2 structures, erect stage; seating capacity 600; M. S. Mortan will be manager.

Tex., Abilene.—J. J. O'Malley and others are reported organizing company with \$25,000 capital stock to erect moving-picture theater at Pine and 3d Sts.; 50x140 ft.; hollow tile; California mission style; main entrance flanked on each side by small store; semicircle between 2 stores paved with tile; 1 story; 25 ft. high; steam heat; capacity 1000; plans by M. L. Waller & Co., Abilene.

Fla., Fort Myers.—Orpheum Theater will remodel building, construct front, etc.

W. Va., Fairmont.—J. D. Galliher and Wm. Prince will erect moving-picture theater on Jefferson St.; construction begins July 1.

W. Va., Wheeling.—Ambrose Hagib will erect 2 motion-picture theaters on S. Chapline St. and N. Main St.

WAREHOUSES

D. C., Washington.—E. W. Hugely opened bids to erect warehouse and store building. (See Stores.)

Ga., Moultrie.—A. Huber is having plans prepared by Carl Huber, Moultrie, for warehouse; 1 story; 150x150 ft.; brick; rubberoid roofing; cost \$4500. (Lately noted.)

La., New Orleans.—Board of Commrs. of Port of New Orleans, Ernest M. Loeb, Pres., 200 New Orleans Court Bldg., receives bids until July 21 to construct reinforced concrete buildings for cotton warehouse and terminals, including 2-story wharf house about 120x2000 ft., warehouse "E," about 150x580 ft., with attached runways and appurtenances, located on Mississippi River near Valence St.; plans and specifications at office of Ford, Bacon & Davis, Engrs., 921 Canal St., New Orleans. (Previously noted.)

Mo., Kansas City.—J. Peltzman has plans by John Henry, 22 Charlotte St., Kansas City, for warehouse at 1908 Locust St.; 25x110 ft.; ordinary construction; tar roof; cost \$3000; construction begun. (Lately noted.)

N. C., Winston.—Knott Bros. are erecting tobacco warehouse addition; will make structure 182x24 ft. and give total floor space of 45,000 ft.

Okla., Oklahoma City.—Alexander Drug Co. will erect warehouse and laboratory building at 1-13 W. 6th St.; 140x150 ft.; fireproof; patent roof; reinforced concrete floor; heating and lighting not decided; passenger and freight elevator; cost about \$125,000; architect not selected; address owner. (See Machinery Wanted—Electrical Equipment, Heating Plant, Elevator, Building Material.)

S. C., Anderson.—Equinox Mill will build cloth-storage warehouse and 25 cottages; install electric-light plant, etc.; cost \$25,000 to \$30,000.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

D. C., Washington.—Adolph Effenbach let contract to August F. Getz, 804 D St. N. E., Washington, to erect apartment-house at 310 K St. N. E.; 29x36 ft.; brick; slag roof; hot-water heat; cost \$5000; Albert Goenner, Archt., 35 B St. N. W., Washington.

D. C., Washington.—Mrs. Byron Richards let contract to Henry Miller, 604 D St. N. E., Washington, to remodel apartment-house at 209 A St. S. E.; 19x52 ft.; ordinary construction; tin roof; fireproof floor; cost \$3600; hot-water heat, \$500; R. S. Hunt, Archt., 248 S St. S. E., Washington.

Ky., Lexington.—Misses Mary and Margaret Payne let contract to S. F. McCormick Lumber Co., Lexington, to erect apartment-house; 3 stories; brick and stucco; 3 suites; John V. Moore, Archt., Lexington.

Ky., Lexington.—J. E. Cassidy let contract to Combs Lumber Co., Lexington, to erect apartment-house at Maxwell and Woodland Aves.; 3 stories; brick; 2 stores on lower floor; cost \$7500; Frank Bedford, Archt., Lexington. (Lately noted.)

Md., Baltimore.—Herbert O'Dell, 805 N. Carey St., let contract to F. C. Sprecknall to remodel building at 700 N. Gilmer St. for apartment-house; cost \$3000.

Mo., St. Louis.—Herman Koring, 3191 S. Grant Ave., let contract to Theodore Degenhardt Building & Contracting Co., 3916 California St., St. Louis, to erect tenements at 3220-22 Michigan St.; 2x45 ft. each; mill construction; composition and gravel roof; tile and wood floors; hot-air heat; construction begun.

Tenn., Memphis.—H. P. Hurt let contract to L. E. Moody, Memphis, to erect apartment-house; 2 stories; brick; steam heat; cost about \$6000.

Va., Norfolk.—H. C. Hoggard & Co., Agts., let contracts to remodel building at York and Botetourt Sts. for apartment-house as follows: Elliott & Co., carpenter, tin, cement, brick and tile work and roofing materials; Wilson & Co., heating and plumbing; G. T. Crumo, plastering; J. D. McFarland, paint and paper; Wm. A. Buckard & Co., electric work; all of Norfolk; tin roof; wood and cement floor; steam heat; electric light; cement sidewalk. (Noted in Apr.)

Va., Roanoke.—E. W. and J. W. Poindexter let contract to erect store and apartment building. (See Stores.)

ASSOCIATION AND FRATERNAL

La., Shreveport.—Scottish Rite Cathedral Co. let contract to Stewart-McGehee Construction Co., Little Rock, Ark., to erect proposed cathedral at 725 Cotton St.; 3 stories; brick; cost about \$120,000 without mechanical equipment.

N. C., Winston-Salem.—Y. W. C. A. is having plans prepared by Shattuck & Hussey, 19 S. LaSalle St., Chicago, for building; 2 or 3 stories; cost about \$20,000; details not determined.

BANK AND OFFICE

Fla., Winter Haven.—Snell National Bank has plans by and let contract to Seymour-Craig Co., Winter Haven, to erect brick store and office building; 50x49 ft.; fireproof; metal roof; wood floor; electric light; cement sidewalk; cost \$5200. (Lately noted.)

Ga., Donaldsonville.—Planters' Bank let contract to A. C. Knight, Albany, Ga., to erect bank building; 30x50 ft.; tin roof; tile floor. (Lately noted.)

La., Alexandria.—Burkes Construction Co., Hattiesburg, Miss., has contract to erect brickwork, reinforcing concrete and fireproofing work on 6-story bank, store and office building to be erected by Commercial Bank & Trust Co.; cost \$120,000. (Nicol, Langford & Johnston, Realty Bldg., Louisville, Ky., previously reported having general contract.)

Okla., Drumright.—Drumright State Bank let contract to erect bank building; 25x30 ft.; 3 stories; cost \$15,000. (Lately noted.)

Va., Rosslyn.—Arlington Trust Co., E. W. Stearns, Pres., let contract to Arthur L. Smith, 1111 Woodward Bldg., Washington, at \$5500 to erect addition to and remodel bank building; addition 14x50 ft.; brick; Carey roof; remodeling includes terrazzo floor; hot-water heat; electric light; Frank Upman, Archt., Woodward Bldg., Washington. (Lately noted.)

Tenn., Lynchville.—Check & Hall will erect warehouse.

W. Va., Summersville.—J. H. Kincaid will erect brick warehouse.

W. Va., Powhatan.—First National Bank let contract to D. T. Burton, Wheeling, W. Va., to erect bank building.

CHURCHES

Okla., Muskogee.—First Presbyterian Church let contract to P. Culp, Muskogee, to rebuild structure damaged by fire; will construct balcony over Sunday-school room, install new pipe organ, etc.

Tex., Miles.—First M. E. Church let contract to Watkins & McKinley, Miles, to erect Sunday-school building; 36x60 ft.; frame; shingle roof; wood floor; city light; cost \$3500; H. M. Harvin, Archt., 506 Trust Bldg., Miles. (Noted in May.)

Tex., Wichita Falls.—Catholic church let contract to J. Dyer, Box 336, Wichita Falls, to erect building at Holiday and 9th Sts.; 50x107 ft.; brick, stone and concrete; slate roof; basement floor, concrete; auditorium floor, pine; gas heating separate; electric light; cost \$22,250; Cangulnette & Staats, Archts., Fort Worth; construction begun. (Lately noted.)

Va., Staunton.—Central Methodist Church South let contract at \$6190.12 to G. W. Fretwell, Staunton, to enlarge building on Lewis St.; will erect addition; ordinary mill construction; brick and cast stone made by Wm. Larner & Sons; slate roof; gas and electric lights; stained-glass windows; T. J. Collins & Son, Archts., Staunton. (Lately noted.)

W. Va., Guyandotte, Ind. Sta. Huntington. Guyandotte M. E. Church let contract to C. W. McNulty, Huntington, to remodel building; will raise structure several feet, construct basement story to provide assembly-room with stage, 2 classrooms, parlor and kitchen; remodel front; install pipe organ; also let contract to West Virginia Sanitary Plumbing Co. and J. A. Castle for wiring; total cost about \$5000; Verus T. Ritter, Archt., Huntington. (Lately noted.)

CITY AND COUNTY

N. C., Carthage.—Home-Moore county let contract to John T. Moffitt, Charlotte, N. C., to erect home; Frank B. Simpson, Archt., Raleigh, N. C. (Noted in May.)

Va., Norfolk.—Library.—Building Comm. of Norfolk Public Library, Robt. M. Hughes, Chrmn., let contract to Nash-Jones Co., Law Bldg., Norfolk, to erect branch library on 15th St.; 75x30 ft.; stackroom 31x31 ft.; brick; stackroom fireproof; slate and gravel roof; direct steam heat; concrete floors; cost \$17,500; Ferguson, Calrow & Taylor, Archts., 1024 Royster Bldg., Norfolk. Address contractor. (Lately noted.)

COURTHOUSES

Fla., Fort Myers.—Lee County Commrs. let contract to Franz Safe & Lock Co., Jacksonville, for vaults for courthouse for which F. P. Helfner, Atlanta, has general contract; total cost \$100,000; P. J. Kennard, Archt., Tampa, Fla. (Other contracts noted in Jan.)

Ga., Chatsworth.—Murray County Commrs. Atlanta, to erect courthouse exterior; fireproof; slate roof; concrete floor; reinforced concrete dome; contract for interior completion let in year; Alexander Blair, Archt., Macon, Ga. (Lately noted.)

Ky., Lancaster.—Garrard county let contract at \$15,546 to Raymond Construction Co., Cincinnati, Ky., to alter and repair courthouse; Weber, Werner & Adkins, Archts., Cincinnati. (Lately noted.)

DWELLINGS

Ala., Birmingham.—Mrs. H. R. Sullivan let contract to Joe Ward, Birmingham, to erect residence; 2 stories; brick; cost \$4500.

Ala., Birmingham.—W. W. Coghill let contract to A. M. Sharp, Birmingham, to erect dwelling at 12th Ave. and 29th St.; 2 stories; brick veneer; composition roof; cost about \$7840.

Ark., Pine Bluff.—M. E. Bloom let contract to Edgar Hogan, Pine Bluff, to erect two 5-room bungalows on W. 2d Ave.; cost about \$4500.

Ala., Mobile.—Mary H. Lightfoot, Old Shell Rd., 2 E. Fernway, let contract to W. L. Murphy to erect cottage; frame; cypress shingle roof; cost \$3000; John A. Wetzel, Archt., Mobile. (Noted in May.)

Fla., Bradentown.—Mrs. J. J. Newman will erect 5-room bungalow; contract let.

Fla., Clearwater.—F. W. Morgan let contract to E. E. Copeland & Co., Clearwater, to erect residence; brick; Lester Avery, Archt., Clearwater.

Fla., Merritt.—Marins Charavay, Jersey City, let contract to W. A. Chauncey, Cocoa, Fla., to erect dwelling; 45x40 ft.; cement blocks; metal shingles; wood floors; gasoline lighting; also considering electricity, or both; cost \$3000.

Ga., Augusta.—Clayton P. Boardman let contract to Woodward Construction Co., Augusta, to erect dwelling on Highland Ave.; 2 stories; frame; cypress shingle roof; hardwood and Georgia pine floors; steam heat; electric lighting; cost \$5300; H. T. E. Wendell, Archt., Augusta. (Lately noted.)

Ga., Moultrie.—Friedlander Bros. let contract to G. C. Hall, Moultrie, to erect residence; to Moultrie Electric Co. for wiring and fixtures.

Ga., Rome.—W. B. Hale let contract to Jos. W. Morris, Rome, to erect dwelling on Ave. A; 42x43 ft.; bungalow type; cost about \$3000; H. A. Rawlins, Archt., 3 Third Ave., Rome. (Lately noted.)

Ky., Maysville.—Isaac Chansler let contract to Jas. E. Dawson, Maysville, to erect 7-room brick bungalow.

Ky., Maysville.—E. A. Robinson has plans by and let contract to W. H. Frederick to erect dwelling on W. 2d St.; bungalow type; ordinary construction; hardwood floor; hot-water heat; electric light; cost \$5000. (Lately noted.)

Ky., Scottsville.—Dr. H. M. Meredith let contract to Slayden & McNabb, Waverly, Tenn., to erect residence; R. E. Turbeville, Archt., Nashville, Tenn. (Lately noted.)

Ky., Scottsville.—N. S. Guy let contract to Slayden & McNabb, Waverly, Tenn., to erect dwelling; 50x90 ft.; brick veneer and hollow tile; composition shingle roof; hardwood floor; cost \$6000; hot-water heat, \$600; R. E. Turbeville, Archt., Noel Block, Nashville, Tenn. Address Contractors.

La., Alexandria.—A. T. Felt let contract to Hudson Construction Co., Alexandria, to erect 2-story residence on Albert St.

Md., Baltimore.—Albert M. Soty let contract to Roland Park Co., Roland Park, Md., to erect dwelling in Guilford, 2½ stories; frame; stucco; cost \$7500; Edw. L. Palmer, Jr., Archt., 408 Roland Ave., Roland Park, Md. (Noted in March.)

Md., Baltimore.—John M. Regardt let contract to West Construction Co., Knickerbocker Bldg., Baltimore, to erect dwelling, garage, approaches and service court on Charles-St. Ave. ext., near Whitefield Rd., Guilford; 40x96 ft.; brick walls, stuccoed; glazed Imperial Spanish tile roof; hardwood floors; hot-water heating; electric lighting; concrete roadways; reported cost about \$40,000; Otto G. Simonson, Archt., Maryland Casualty Tower, Baltimore. (Lately noted.)

Md., Baltimore.—Noel H. Matthews let contract to G. Walter Tovell, Eutaw and McCulloh Sts., Baltimore, to erect dwelling in Guilford; 39x26 ft.; 2½ stories; frame; stucco; slate roof; hot-water heat; electric light; cost \$8000; Edw. L. Palmer, Jr., Archt., 408 Roland Ave., Roland Park, Md. (Noted in May.)

Md., Hillsmere (not a P. O.).—M. H. Smith let contract to Griscomb & Carlson, Annapolis, to erect residence; 2½ stories; frame and stucco; 56x100, with wings 27x35 ft. and 22x50 ft.; cost \$25,000; Cyrus Bissell, Archt., New York. (Lately noted.)

Md., Baltimore.—Edmund Baron let contract to erect dwelling and store. (See Stores, Contracts Awarded.)

Miss., Clarksdale.—Mr. Howard let contract to J. R. Schultz, Clarksdale, to erect bungalow; cost \$4000.

S. C., Greenwood.—B. T. Seago let contract to Samuel Baker, Greenwood, to remodel residence; cost \$2000; J. E. Summer, Archt., Greenwood.

Tenn., Adams.—Harry Saegar, Evansville, Ind., let contract to R. W. Saegar, Adams, to erect 2-story frame residence.

Tenn., Athens.—James G. Fisher, Prest. First National Bank, let contract to erect residence on Madison Ave.

Tenn., Memphis.—E. F. Longinotti let contract to T. J. Douglas & Co., Memphis, to erect stucco bungalow at Tutwiler Ave. and Watkins St.; cost \$3000; Regan & Weller, Archts., Memphis.

Tenn., Memphis.—Ernest C. Cook let contract to W. D. Derryberry, Memphis, to erect residence at 1741 Vinton Ave.; 10 rooms; stone and stucco; cost \$9000.

Tenn., Nashville.—Wm. K. Littlefield let contract to W. E. Parrish & Co., Nashville, to erect frame bungalow in Belmont Heights.

Tex., Rio Grande.—A. M. Kelsey let contract to erect residence; 2 stories; 8 rooms; will install plant to irrigate 50 acres to be planted in fruits and vegetables.

Tex., Gatesville.—Dr. R. L. Raby let contract to Smith & Metcalf, Gatesville, to erect dwelling; 2 stories; 8 rooms; ordinary frame construction; wood shingle roof; hardwood floor first story, pine on second; lighting in general contract; cost \$1675; sidewalks, \$150; H. D. Pampel, Archt., Temple, Tex. (Lately noted.)

Tex., Galveston.—Hans Guldman let contract to Heath & Holmes, Galveston, to erect residence; 2 stories; brick; cost about \$15,500; L. S. Green, Archt., Galveston.

Tex., Marfa.—Courtney Mellard let contract to erect residence.

Tex., San Antonio.—T. L. Moore let contract to Gauderman & Wilson, San Antonio, to erect dwelling on Virginia Blvd.; 8 rooms; mill construction; shingle roof; rift pine floor; electric light; cement sidewalk; cost \$2000; Wm. A. David, Archt., San Antonio. (Lately noted.)

Va., Fairfax.—M. Carter Hall let contract to C. L. Smith, Oakton, Va., to erect dwelling; 10 rooms; ordinary construction; shingle roof; rift pine floor; hot-water heat; acetylene light; Ferguson, Calrow & Taylor, Archts., Norfolk, Va. (Lately noted.)

Va., Norfolk.—J. B. McCaw let contract to Elliott & Co., Norfolk, to alter residence at York and Botetourt Sts.; cost \$5000.

Va., Norfolk.—Walter G. Blick let contract to Sawyer Bros., Norfolk, to erect brick and frame residence on Colonial Ave.; cost \$5800.

Va., Norfolk.—H. A. Williams, 207 Arcade Bldg., has plans by and let contract to D. W. Godwin, Norfolk, to erect 2 dwellings on 26th St.; 6 rooms; mill construction; slate roof; pine floor; electric light; cost \$4000.

Va., Norfolk.—Wilson White let contract to Whitehurst & Beasley to erect residence on Maury Pl.; 2½x62 ft.; slate roof; oak floors; hot-water heat; cost \$7000; Ferguson, Calrow & Taylor, Archts., Norfolk. (Lately noted.)

Va., Richmond.—P. E. W. Goodwin, 307 E. Broad St., has plans by and let contract to Davis Bros., Inc., Richmond, to erect dwelling on 1st Ave., Highland Park; 8 rooms; ordinary construction; slate roof; first floor, hardwood; hot-water heat; electric light; cost \$5800.

Va., Staunton.—A. Stuart Robertson let contract to C. W. Lambert, Staunton, to erect 2-story stucco residence on E. Main St.

W. Va., Follansbee.—Fred May let contract to W. W. Pichard, Bethany, W. Va., to erect 2-story frame residence; cost \$4500.

W. Va., Wheeling.—Mrs. Louisa Sonderman let contract to J. W. Beltz & Sons Co., Wheeling, to erect residence at 427 Main St.; cost \$4000.

W. Va., Huntington.—J. H. O'Neil, Ashland, W. Va., is reported to have contract to erect 50 dwellings for company operating in Paint Creek coal field; materials furnished by Huntington Lumber & Supply Co., Huntington.

GOVERNMENT AND STATE

La., New Orleans.—Dwelling—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract at \$6700 to L. F. Alexander, Washington, D. C., to erect 1-story frame dwelling for chief operator. (Previously noted.)

Okla., Ardmore.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, let contract at \$120,200 to Geo. W. Stiles Construction Co., Rookery Bldg., Chicago, to erect postoffice; light Bedford stone; 3 stories and basement; brick facing; fireproof; composition roof; 6000 sq. ft. ground area. (Lately noted.)

Tex., Fort Bliss.—Guardhouse and Bakery.—Major Wm. Elliott, Depot Quartermaster, let contracts at \$15,796 and \$6367, respectively, to Otto P. Kroeger, El Paso, Tex., to erect guardhouse and bakery. (Noted in April.)

Va., Front Royal.—Reservation.—Raleigh Iron Works, Raleigh, N. C., has contract at \$1372 for heating, and F. R. Forsyth at \$365 for electric wiring, for 27 buildings on U. S. Army reservation, for which M. F. Normoyle & Sons, Roanoke, are general contractors. (Lately noted.)

Va., Staunton.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., let contracts as follows for improvements to postoffice buildings and

grounds: At \$1232.42 and \$144, respectively, to Bright & Rohr, Staunton, for extensions and improvements of vitrified-brick driveway and improvements to heating plant; at \$2885 to Montague Payne, Staunton, to enlarge interior, extend screens, enclose working rooms at each end of building, etc.; at \$2461 to William Wilby, Selma, Ala., for improvements and extensions of plumbing.

HOSPITALS, SANITARIUMS, ETC.

Ark., Arkadelphia.—Dr. J. H. Bell let contract to erect store and sanitarium building. (See Stores.)

Tenn., Chattanooga.—City let contract at \$31,998 to Park-Grimes Co., 219 Hamilton National Bank, Chattanooga, to erect administration building at Erlanger Hospital; 40x110 ft.; Vulcanite roof; concrete, brick and terracotta; 4 stories; fireproof; elevators not let; approved plans for negro ward with capacity of 64 patients; W. H. Sears, Archt.; J. D. Alsop, Associate Archt., both of Chattanooga. (Lately noted.)

HOTELS

D. C., Washington.—Thos. H. Pickford let contract to Melton Construction Co., 1012 H St. N. W., Washington, to erect hotel at 16th and I Sts. N. W.; 10 stories; 75x100 ft.; brick, stone and concrete; slag roof; electric light; cost \$180,000; B. Stanley Simmons, Archt., 1255 Irving St. N. W., Washington. (Noted in April.)

MISCELLANEOUS

N. C., Raleigh.—Clubhouse.—Woman's Club approved plans by Smallwood & Deacy, New York, for clubhouse; tapestry brick; overhanging tile roof; Spanish style; red tile floor in lobby; auditorium to seat 400, etc.

Okla., Chickasha.—Clubhouse.—Chickasha Country Club let contract to L. P. Larson to erect clubhouse near Chickasha; 80x70 ft.; ordinary construction; shingle roof; hardwood floor; cost \$7000; heating plans \$500; electric light; P. G. Spinning, Archt. Address Tom J. Boyd, Secy. Club. (Noted in May.)

Okla., Medicine Park.—Home.—John N. Shepler, Chrmn. Press Home Bldg. Com., Constitution, Lawton, Okla., let contract to H. A. Lloyd, Lawton, Okla., to erect Oklahoma State Press Home at Medicine Park; 35x100 ft.; rock and wood construction; composition roof; wood floors; hot-water heat; plans and specifications at office of Constitution, Lawton, Okla.; cost \$12,000. (Lately noted.)

Tex., Houston.—Sisters of Charity of the Incarnate Word let contract to James Shapley & Son, Houston, to erect St. Anthony's Home for the Aged; 3 stories and basement; cost about \$18,000; Lane & Dowdy, Archts., Houston.

RAILWAY STATIONS, SHEDS, ETC.

La., New Orleans.—Virginia Bridge and Iron Co., Roanoke, Va., has contract for about 340 tons of structural steel for erection of Trans-Mississippi Terminal R. R. Co.'s freight and passenger terminals, for which J. W. Thompson, 510 Boatmen's Bank Bldg., St. Louis, has general contract; reported cost \$250,000. (Previously noted.)

SCHOOLS

Ark., Brookland.—Trustees let contract to John Powers, Harrisburg, Ark., to erect high school; cost \$7500; Mr. German, Archt., Jonesboro, Ark.

Ark., England.—School Board let contract at \$19,500 to Henry Dusenberry, England, to erect school; 2 stories; brick; 25 rooms. (Noted in April.)

D. C., Washington.—Catholic Sisters College let contract to Chas. J. Cassidy Co., 716 Southern Bldg., Washington, to erect dining hall at 8th and Varnum Sts., N. E.; 104x50 ft.; brick and terra-cotta; tile roof; hot-water heat; electric light; cost \$36,000; Murphy & Olmsted, Archts., 1410 H St. N. W., Washington.

Fla., Apalachicola.—W. F. Martin, Dothan, Ala., has contract at \$4000 to install heating equipment in school, for which W. V. Henry, Jacksonville, is general contractor; cost \$22,000. (Noted in May.)

Fla., Lake Butler.—Trustees let contract to Rogers-Simmons Co., McRea, Ga., to erect additions to school; 2 stories; 24x36 ft.; ordinary construction; metal shingle roof; cost \$5330; W. W. Simmons, Archt., McRea; date of beginning work indefinite. (Lately noted.)

Ky., Barbourville.—School Board let contract to S. M. Perkins, Williamsburg, Ky., to erect high school; cost \$18,000. (Lately noted.)

Ky., Rich Pond.—Warren County Board of Education let contract at \$2812.30 to M'illard Phelps, Rich Pond, to erect school building; 2 stories; veneered brick; 4 rooms and auditorium; completion by Sept. 1.

Md., Baltimore.—Goucher College let contract to B. F. Bennett Building Co., 123 S. Howard St., Baltimore, to alter building at St. Paul and 23d Sts.; cost \$3000.

Md., Wolfsville.—School Board, Frederick, Md., let contract to E. C. Brandenburg, Smithville, Md., to erect school building; 62.10x62.10 ft.; 4 rooms; fireproof; slate roof; hardwood floors; heating not in general contract; cost \$6000; Eward Kepner, Archt., Frederick; construction begun. Address contractor. (Lately noted.)

Mo., Green Castle.—School Board let contract to McKim & Bartlett, Kirksville, Mo., to erect school, for which \$5000 bonds were voted; J. J. Hoffman, Milan, Tenn., has contract for brick work.

Mo., Warrensburg.—Regents of Warrensburg Normal School let contract at \$41,588 to Capital City Planning Mill Co., Jefferson City, Mo., to rebuild training school building; Smith, Rea & Lovitt, Archts., 602-12 Finance Bldg., Kansas City, Mo. (Lately noted.)

N. C., Chapel Hill.—University of North Carolina let contract at \$13,536 to Rose & Beaman, Goldsboro, N. C., to erect stadium; steel reinforced concrete; grandstand to seat at least 2500; marble finish baths, etc.; Jos. Evans Sperry, Archt., 409 Calvert Bldg., Baltimore, Md. (Previously noted.)

N. C., Davidson.—Davidson College is reported to have let contract to erect residence for Dr. H. B. Arbuckle; completion by September 1.

N. C., Elk Park.—Frank A. Edmondson, Chrmn. of Com., receives bids until June 21 to erect 2-story brick school; cost \$6800.

S. C., Simpsonville.—Trustees let contract to Simpsonville Mercantile Co., Simpsonville, to erect annex to high school.

Okla., Crowder.—School Board let contract to W. E. Vorhes, North McAlester, Okla., to erect school on Main St.; 60x30 ft.; 2 stories; ordinary construction; Barrett roofing; wood floor; cost \$11,000; heating plant, \$1900; J. J. Walsh, Archt., McAlester, Okla. (Lately noted.)

S. C., Columbia.—School Commrs. let contract at \$31,330 to Taylor-Waters Construction Co., Columbia, to erect 8 additional classrooms to Logan school; heating plant not included in contract; Wilson & Sompayrac, Archts., Columbia. (Lately noted.)

S. C., St. Mathews.—City let contract to F. D. McNulty to erect addition to school building; ordinary construction; tin shingle roof; wood floors; steam heat; electric lighting; cost \$6000; Edwards & Sayward, Archts., 633 Candler Bldg., Atlanta. (Noted in May.)

Tenn., Brownsville.—Hayward County Commissioners let contract to Moore & Moore, Memphis, to erect school; cost about \$13,500; Mahan & Broadwell, Archts., Memphis. (Lately noted.)

Tenn., Chattanooga.—Girls' Preparatory School, 411 Palmetto St., let contract to George Lerch, Mission Ridge, Tenn., to remodel building; fireproof; cost about \$4000; C. E. Bearden, Archt., Chamberlain Bldg., Chattanooga.

Tenn., Chattanooga.—Hamilton County Board of Education let contract at \$5134 to A. W. Duncan, 504 Duncan Ave., Chattanooga, to erect Fort Cheatham school; Chandler & Campbell, Archts., 730 Hamilton National Bank Bldg., Chattanooga; let contract at \$3800 to Sam Wilson, Chattanooga, to erect Silverdale school; C. E. Bearden, Archt., Chattanooga; also let contract to A. W. Duncan to erect building at Bonny Oaks for reform school; 65x70 ft.; 2 stories and basement; brick; composition roof; concrete, wood and Flexitile floors; heating, lighting and sidewalks not in contract; cost \$10,000; C. E. Bearden, Archt., Chattanooga, who may be addressed; L. G. Walker, Chrmn. of Comm. (Lately noted.)

Tenn., Manchester.—City has plans by and let contract to Geo. W. Leming, Manchester, to erect school on College St.; 62x30 ft.; concrete and brick; tin roof; cement and wood floor; hot-air heat; electric light; cost \$11,000. Address Contr. (Lately noted.)

Tex., Celina.—Board of Education let contract to Shelton & Huneke, Hugo, Okla., to erect high school; 64x108 ft.; 3 stories; ordinary construction; asbestos roof; wood floor; sub-story floor, concrete; cost \$30,000; steam heat \$2500; electric light; Wm. Albert Tackett, Archt., Sherman, Tex. Address Contr. (Lately noted.)

Tex., Columbus.—Columbus Independent School Dist. let contract to McKenzie &

Wilder, Houston, to remodel school building; cost \$2544; J. T. Williams, Archt., Wharton, Tex. (Lately noted.)

Tex., Marshall.—Building Com. College of Marshall let contract at \$75,000 to Caddo Construction Co., Muskogee, Okla., to erect administration building; accommodations for 720 pupils; also let contract to Hill Bros. & Co., Waco, Tex., for plumbing and heating; Geo. Burnett, Archt., Cameron Bldg., Waco, Tex. (Lately noted.)

Va., Norfolk.—City let contract to J. H. Pierce, Norfolk, to erect 2-story brick addition to John T. West school; 50x100 ft.; fireproof; slate roof; concrete floors; cost \$26,000; Brown & Lehman, Archts., Norfolk; construction begun. Address Contractor. (Lately noted.)

Va., Staunton.—School Board let contract at \$5500 to J. M. Lee, Staunton, to erect First Ward negro school and at \$8800 to John S. Lee, Staunton, to erect Second Ward negro school, and to Geo. Cottrell, Staunton, for heating; brick-veneer or solid brick construction; T. J. Collins & Sons, Archts., Staunton. (Lately noted.)

Va., Stuarts Draft.—School Board of South River Dist. let contract (conditionally) at \$7500 to R. L. Patterson, Waynesboro, Va., to erect high school; brick veneer; 8 rooms; contract for heating to be let in several weeks; T. J. Collins & Son, Archts., Staunton, Va. (Lately noted.)

W. Va., Fulton (P. O. at Wheeling).—Washington County Dist. Board of Education let contract at \$17,000 to Fawcett & Riley, Bridgeport, W. Va., to erect school; 2 stories; brick and concrete; fireproof; 8 rooms; heating and plumbing not included in contract; Geo. S. Mooney, Archt., 621 Schullbach Bldg., Wheeling. (Lately noted.)

W. Va., Great Cacapon.—School Trustees let contract to F. O. Trump, Carneysville, W. Va., to erect 2-story brick grade school; cost \$6000; Holmboe & Lafferty, Archts., Clarksburg, W. Va.

STORES

Ala., Bessemer.—Mrs. C. M. Ray let contract to W. F. Nolan, Bessemer, to erect 2 brick stores; pressed brick front; 25x50 ft.

Ala., Birmingham.—Marks & Williams let contract to Guggler Bros., Birmingham, to erect store building at 1921 2d Ave.; 2 stories; brick; cost about \$10,000.

Ark., Arkadelphia.—Dr. J. H. Bell let contract to Hammonds & Albaugh to erect building on Main St.; stores below; sanitarium above; 54x100 ft.; mill construction; concrete floors; gas heating; electric lighting; freight elevator; cost \$10,000; C. A. Tobin, Archt., Arkadelphia. (Lately noted.)

D. C., Washington.—Thos. Hyde let contract to Wm. S. Spencer, 216 Bond Bldg., Washington, to remodel store at 1338 New York Ave. N. W.; brick; tin roof; cost \$4000; Marsh & Peter, Archts., 520 13th St. N. W., Washington.

D. C., Washington.—Washington Electrotype Co. let contract to A. H. Aylor, 82 Seaton Pl. N. W., Washington, to erect store at 923 11th St. N. W.; 23x30 ft.; brick; slag roof; hot-water heat; electric light and power; cost \$6249; W. C. Nichols, Archt., Oxford Bldg., Washington.

Fla., Jacksonville.—Smith, Richardson & Conway let contract to Hillyer & Spirring Co., Jacksonville, to erect meat market and cooler building at Cedar and Bay Sts.; 56x130 ft.; concrete; composition roof; concrete floor; cost \$25,000; H. C. Clark, Archt., Chicago; construction begun. (Hillyer & Spirring lately noted as owners.)

Fla., Winter Haven.—Snell National Bank let contract to erect store and office building; 50 ft. deep. (Lately noted.)

Ga., Atlanta.—J. N. Hirsch let general contract to H. J. Carr & Co. to rebuild Orpheum Theater for business purposes; plumbing and heating to Farrell Heating Co.; elevators, Otis Elevator Co.; all of Atlanta; electric work to T. H. McKinney; cost about \$43,000; W. T. Downing, Archt., Atlanta. (Lately noted.)

Ky., Fulton.—Mrs. G. W. Kirkland is erecting store building; 40x50 ft.; 2 stories; mill construction; tin roof; concrete floors; cost \$6000; electric lighting \$100; G. W. Kirkland, Archt., Fulton; W. M. Hill, Contr. (Lately noted.)

La., Alexandria.—Burkes Construction Co., Hattiesburg, Miss., has contract for brickwork, reinforcing concrete and fireproofing work on bank, store and office building. (See Bank and Office.)

Md., Baltimore.—American Tobacco Co., 208-16 S. Charles St., will remodel building at 415 N. Howard St. for store.

Md., Baltimore.—Edmund Baron let contract to E. Eyring & Sons, 800 S. 3d St., Baltimore, to erect store and dwelling at 231-3 Key Highway; 3 stories; 26x30 ft.; brick; slag roof; hot-water heat; cost \$4000; L. Schoenlein, Archt., 2217 E. Baltimore St., Baltimore. (Lately noted.)

Miss., Schlater.—Burkes Construction Co., Hattiesburg, Miss., general contractor to erect store buildings for E. E. Jameson and Schlater Bros., has purchased all materials except structural steel and plain white ceramic floor tile. (Lately noted.)

Mo., Kansas City.—Dr. W. S. Woods, Excelsior Springs, Mo., let contract to F. H. Crites, 2136 Bellevue Ave., Kansas City, to remodel building for Frederick Stearns & Co., Detroit, Mich.; mill construction; composition roof; joist floor construction; indirect electric lighting; repair elevator; cost \$16,485; gravity steam heating, \$2000; Smith, Rea & Lovitt, Archts., 601 Finance Bldg., Kansas City. (Noted in May.)

Mo., St. Louis.—Scudders.—Gale Grocery Co. let contract to Westlake Construction Co., Mercantile Bldg., St. Louis, to erect wholesale grocery store, coffee roaster and packing plant at 12th and Poplar Sts.; 180x155 ft.; mill construction; tar roof; maple floor; hot-water heat; 2 electric platform elevators; 2 spiral chutes; 1 gravity carrier and hoist; Klipstein & Rathman, Archts., Chemical Bldg., St. Louis; lately noted. Address Contr. (See Machinery Wanted—Roasters (Coffee), etc.)

N. C., Asheville.—Mrs. Alice T. Connally, J. W. Pless, Atty., Marion, N. C., will expend \$10,000 for improvements to building occupied by H. Redwood & Co.; remodel front, tile entrance, install elevator, etc.

N. C., Wilmington.—Murchison National Bank let contract to Rhodes & Underwood, Wilmington, to erect 2-story business building adjoining bank building; frontage 18 ft.; brick walls; terra-cotta and stone front; cost \$6000; J. F. Beltner, Archt., Wilmington. (Lately noted.)

Okl., Drumright.—Williams & Meeting, Henryetta, Okla., have contract to erect store; 40x75 ft.; asbestos roof; wood and tile floor; gas heat; electric light; cement sidewalk; cost \$7200. Address Paul E. Meeting, Henryetta. (See Machinery Wanted—Building Material, etc.)

Okl., Olton.—Acme Fishing Tool Co., Parkersburg, W. Va., will erect supply house.

S. C., Anderson.—J. H. Anderson let contract to Chas. B. Pruitt, Anderson, to erect store building; ordinary construction; 18x100 ft.; tin roof; copper set plate and prism glass; terra-cotta cornice; tile copings; tex brick; hand elevator; metal ceilings; hardwood floors; cost \$6500; Casey & Fant and J. B. & W. D. Simpson, Archts., Anderson. (Lately noted.)

Tex., Austin.—C. A. Dahlich let contract to Albert Mundi, Austin, to erect store at 1406-1412 Lavaca St.; 130x138 ft.; 3 stories and basement; principally fireproof; Barrett Specification roof; steam heat; city light; cost \$23,000; Leslie N. Iredell, Archt., Austin. (Lately noted.)

Tex., El Paso.—J. E. Spence let contract to Jolly & Morris, El Paso, to erect store building at 316 Texas St.; 108x72 ft.; ordinary construction; tar and gravel 3-ply roofing; cement and wood floors; cost \$10,400; O. H. Thorman & Co., Archts., El Paso. Address contractors. (Lately noted.)

Tex., Marlin.—Gardero & Holloway let contract to Caddo Construction Co., McKinney, Tex., to erect store building; to Schimming & Eddins, Marlin, for plumbing and heating, and Wright Bros., San Antonio, for electric wiring; cost \$25,000.

Va., Roanoke.—E. W. and J. W. Poindexter let contract to L. C. Rhodes, Roanoke, to erect store and apartment building on 1st St.; 2 stories; cost \$7000; G. R. Ragan, Archt., Roanoke.

THEATERS

Ala., Birmingham.—Strand Theater Co. let contract to Wells Bros. Co., 1007 Empire Bldg., Birmingham, to erect motion-picture theater at 1913-15 2d Ave.; 50x140 ft.; fireproof; tar and gravel roof; cost \$15,000; H. B. Wheelock, Archt., Birmingham. Address Contractor. (Lately noted.)

Fla., Tampa.—Strand Amusement Co. let contract to McGucken & Hyer, Tampa, to erect theater; 97x105 ft.; Barrett roofing; concrete floors; gas heating; cost \$35,000; Bonfoey & Elliott, Archts., Tampa. (Lately noted.)

Tex., Austin.—Mr. Hancock let contract to Geo. Fiegel, Austin, to remodel Hancock Opera-house; cost about \$15,000.

WAREHOUSES

Md., Baltimore.—Joe Fisher Specialty Co. let contract to J. Henry Smith, 1640 Hanover St., Baltimore, to erect warehouse at 14-16 S. High St.; 3 stories; 39.7x111 ft.; brick; slag roof; wood floor; steam heat; cost \$20,000; Geo. R. Callis, Jr., Archt., 55 Knickerbocker Bldg., Baltimore, Archt. (Lately noted under Miscellaneous Factories.)

Mo., St. Louis.—St. Louis Basket & Crate Co. let contract to Fruin-Colmon Contracting

Co., St. Louis, to erect warehouse at 173-83 Arsenal St.

Tex., Galveston.—Fred Hartell let contract to Eubank & Dibrell, 203 American Insurance Bldg., Galveston, to erect warehouse at 2714 Avenue A; 1 story; 42x120 ft.; semi-fireproof; composition roof; cost \$6000 without mechanical equipment.

Va., Suffolk.—Holland-Lee Co., A. T. Holland, Prest., let contract to Harwood & Moss, Newport News, Va., to erect warehouse to replace burned structure; 2 stories; reinforced concrete and steel; fireproof; 20,000 ft. floor space. (Lately noted.)

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Birmingham.—W. W. Shortridge of Birmingham and others have made a proposition to the Board of Revenue of this (Jefferson) county looking to the construction of a double-tracked electric railway from Birmingham to the Warrior River, about 25 mi.

Ark., Harrison.—G. H. T. Shaw, Const. Engr., Lee Center, Ill., may give information concerning proposed railroad from Harrison via Jasper to Parthenon, Ark., about 20 mi. Rev. W. T. Allen, Jacksonville, Ala., and F. B. Moody are also interested.

Fla., Clearwater.—E. W. Parker of Tampa, Fla., and associates propose to build a railroad in connection with a bridge. They will announce particulars later.

Ga., Lumber City.—C. F. Smith is Prest. and J. B. Work Gen. Mgr. and Ch. Engr. of the Ocmulgee Valley Ry., which is being built from Lumber City to Jacksonville, Ga., 22 mi., and 11 mi. are now finished, while the entire line is to be completed in September. Directors include C. F. Smith of Lumber City, R. A. Smith, T. A. Smith and W. A. Clark of Jacksonville, J. O. Bland, F. R. Mann, R. N. Dobson and others.

Ga., Macon.—J. B. Munson, receiver of the Macon & Birmingham R. R., has been authorized by the court to borrow \$50,000 more for improvements.

Ga., Savannah.—Central of Georgia Ry. is reported contemplating building a second track on its line from Savannah to Tybee Island. C. K. Lawrence is Ch. Engr. at Savannah.

Ga., Willacoochee.—Ocilla, Pinebloom & Valdosta R. R., 11 mi. long, says a report, has been sold by Henry P. Talmadge of New York to the Henderson Lumber Co., of which J. A. J. Henderson of Ocilla, Ga., is Prest., and it will be extended from Lax to Ocilla, 15 mi., also from Pinebloom to Homerville, about 28 mi. Mr. Henderson is also Prest. of the Ocilla Southern R. R.

Md., Hagerstown.—A. L. Anderson & Bro. of Altoona, Pa., are reported to have begun widening Academy Hill Cut on the Western Maryland Ry. and improvements may be made to Hagerstown yards. H. R. Pratt, Baltimore, is Ch. Engr.

Md., Towson.—Franchise may be granted for the construction of a railway on Register Ave. from the York Rd. to Idlewyde Park. County Comms. at Towson may be able to give information.

Md., Williamsport.—Tracklaying has begun on the Williamsport, Neshle & Martinsburg Ry. Connection will be made with the quarries of the Pittsburgh Limestone Co.

Miss., Yazoo City.—Yazoo & Southwestern Ry. Co., authorized capital \$3,000,000, is reported organized with the following directors: Walter C. Murphy, Yazoo City; P. R. McDonough, Wm. Kissock, Geo. U. Nichols and S. Murphy of Chicago. T. P. McDonough, Yazoo City, is Ch. Engr.

Mo., Siloam Springs.—N. O. Tate of Norton, Kans., and B. J. Boyce of West Plains, Mo., are reported interested in plans for the proposed railroad from Siloam Springs to Pomona, Bakersfield and Gainesville, Mo.

Mo., Mexico.—W. W. Botts, Secy. Mexico Investment & Construction Co., says there is nothing definite yet about the extension of its line southwest from Mexico.

Mo., Hannibal.—Concerning the recent report that A. W. Nesbit of New York city planned construction of a railroad between Perry and Mexico, Mo., H. A. Scheldier of Hannibal says that the proposed road is from Hannibal to Jefferson City, but nothing definite has been done.

N. C., Burlington.—Burlington has voted to issue \$100,000 of bonds to aid the proposed Alamance, Durham & Orange Ry. Junius Harden of Burlington and others interested.

N. C., High Point.—Benj. D. Hammond, P. O. Box 21, Sta. A, Boston, Mass., says

that July 1 is the date for opening bids for construction and equipment of the North Carolina Traction Co., which proposes to build a line from High Point, N. C., to Christiansburg, Va., 137 mi. One steel bridge of 300 ft. and another of 150 ft. and 60 ft. above the water will be required. One tunnel of 600 ft. Mr. Hammond is Prest. and Gen. Mgr.; John L. Kendricks, Vice-Prest.; A. C. Gould, Treas., and George Alexander, Ch. Engr.

N. C., Rutherfordton.—A committee of citizens is reported organized for the purpose of promoting plans to build a railroad out of Rutherfordton. Address Railroad Comm.

N. C., Shelby.—A local committee of citizens has subscribed to make survey of the proposed railroad from Shelby to Casar, about 21 mi., and it is said that W. C. Riddick and C. L. Mann of the Agricultural and Mechanical College, Raleigh, N. C., will be the engineers.

Tenn., Chattanooga.—Nashville, Chattanooga & St. Louis Ry. denies late press report that it expected to make extensions to its yards at Cravens in the near future.

Tenn., Nashville.—Nashville, Springfield & Northern R. R. Co. has been chartered to build a line 80 or 90 mi. long from Nashville to Springfield and Clarksville, Tenn., and Franklin, Ky. Capital \$10,000, which can be increased. E. G. Stribling of Nashville is Prest.; W. B. Myers of Goodlettsville, Tenn., V.-P.; Robert C. Leonard of Nashville, Secy. and Treas. Other incorporators are James B. McKee and John H. Richards of Springfield.

Tex., Beeville.—Dr. Chas. H. Reagan of Beeville is reported interested with C. O. Williams of Corpus Christi in the latter's plan for the construction of a railroad from Beeville via Cadiz and Oakville to Three Rivers, Tex., about 25 mi., and bonuses and right of way are being sought.

Tex., Bowie.—With reference to report that the Oklahoma & Texas Southern Ry. Co. has 20 mi. graded between Bowie and Montague, Tex., W. A. Squires, Secy., Henrietta, Tex., says that the entire line proposed is from Dallas, Tex., to Fort Smith, Ark., 300 mi.,

via Denton, Krum, Forestburg, Bowie, Montague, Necona and Byers to a connection with the Wichita Valley Ry. Also from Red View to Ardmore and McAlester, Okla., and Fort Smith. Ward & Lee, Berclair, Tex., may give information concerning construction bids. R. Burdge, Golden City, Mo., is Prest.; W. A. Morris, Montague, V.-P.; T. F. Berner, Henrietta, Treas.; H. C. Babb, Gen. Mgr., 204 West Myrtle St., Fort Worth, Tex.; W. R. Heagler, Ch. Engr., at Potosi, Mo.

Tex., Marfa.—Capt. B. Q. Musgraves, Marfa, Prest. and Gen. Mgr., says that the name of the proposed railroad from Marfa to Fort Davis, 24 mi., will be Marfa & Fort Davis. Not decided when bids for construction and equipment will be received. Route is level and construction will be easy. B. F. Meador is Gen. Atty., and the other promoter of the road. R. E. Hardaway is Ch. Engr.

Tex., Roby.—Contract is reported let and grading begun for the Roby & Northern R. R. between Roby and North Roby, 4½ mi. There are about 35,000 cu. yds. of work, besides a bridge of 300 ft. and a trestle of 60 ft. L. C. Eastland is Gen. Mgr.

Va., Bland.—A. W. Sulter, Supt. Round Mountain Mining & Mfg. Co., is reported about to build 22 mi. of tram railroad.

W. Va., Bluefield.—Concerning reports that a railroad was to be built from near Princeton, W. Va., and that they were already at work on the contract in Buchanan county, Va., W. W. Boxley & Co., railroad contractors of Roanoke, Va., say that they have not secured any work in Buchanan county and they do not know anything about any work being done there.

W. Va., Parkersburg.—Kanawha Traction & Electric Co., with authorized capital of \$3,000,000, has filed charter and may build local and other electric railroads. Estimated cost of construction immediately proposed about \$1,000,000. Incorporators are Mason G. Ambler, Edward Brast, W. W. Jackson, Henry Logan and Ben T. Neal, Jr. The Parkersburg, Marietta & Interurban Ry. Co. has been merged with the new corporation and the officers are, it is stated, practically the same as those of the old company, thus: S. D. Camden, Prest.; W. W. Mills and C. C. Martin, V.-Ps.; W. W. Van Winkle, Secy.; Ben T. Neal, Jr., Asst. Secy.; J. N. Tabb, Treas.; B. B. Busch, Asst. Treas.

STREET RAILWAYS

Fla., Lakeland.—G. C. Rogan, M. F. Hetherington, W. F. Sneed, S. F. Smith and A. J. Holworthy give notice that July 14 they will apply for a street railway franchise.

La., Alexandria.—F. T. Constant of Alexandria and others contemplate asking franchise to build and operate a new street railway.

Mo., Kansas City.—D. M. Proctor and others contemplate building a street railway extension.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Acetylene Generator.—See Forges, Cranes, etc.—Bureau of Supplies and Accounts.

Air Compressor.—Samson Smith, Engr., Mineral, Va.—Second-hand Ingersoll compressor, about 12x12x16, capacity about 350 cu. ft. air; good condition.

Aluminum.—Surgical Supply Co., Maurice Weintraub, Mgr., Jacksonville, Fla.—Aluminum bars for surgical supply plant.

Bank Equipment.—First National Bank, W. L. Grisette, Prest., Lapine, Ala.—Prices on bank safe and vault door.

Beaver Board.—J. N. King, Box 122, Paris, Tex.—Prices on and samples of beaver board.

Belt, Pulleys, etc.—See Electrical Machinery, etc.—A. A. Northen.

Blackboards.—See School Equipment.—F. W. Andrews.

Boiler.—Samson Smith, Engr., Mineral, Va.—Boiler of 50 to 75 H. P.; second-hand, good condition.

Boiler.—Jewel Pyrites Mining Co., Samson Smith, V.-P., Mineral, Va.—60 H. P. boiler; second-hand.

Bottles, Cases, etc.—Cleveland Bottling Works, Cleveland, Miss.—Bottles, cases, etc.; manufacturers to submit prices, samples, etc., for quick delivery.

Brass Tubings.—Surgical Supply Co., Maurice Weintraub, Mgr., Jacksonville, Fla.—Brass tubings for surgical supply plant.

Brick.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 22 to furnish 400,000 hard burned bricks, delivery Washington, Sch. 8455; until June 29 to furnish 25,000 common bricks, delivery Boston, Mass., Sch. 8468.

Bridge Construction.—Montgomery County Comms., Montgomery, Ala.—Bids until July 12 to construct steel bridge over Pinala Creek on Hayneville Rd.; plans and specifications on file with Thos. H. Edwards, County Engr.

Bridge Construction.—Taylor County Court, Grafton, W. Va.—Bids until June 19

to construct reinforced concrete arch bridge, replacing present structure; 560 ft. long; 18-ft. roadway; 1-ft. walk having clear width 7 ft.; plans and specifications at office County Clerk and Frank D. McEntee, Engr., Union Bank Bldg., Clarksburg, W. Va.; copies furnished for \$5.

Bridge Construction.—Lowndes County Suprs., Columbus, Miss.—Let contract on July 5 to construct 4 steel bridges and 3 concrete culverts; Gus E. Hauser, Jr., Engr., Columbus.

Bridge Construction.—Greenbrier County Court, Job S. Crawford, Clerk, Lewisburg, W. Va.—Bids until July 6 to construct 3 bridges near Rainelle; one 25 ft. long over Little Sewell Creek and two 20 ft. long; all to have 16-ft. roadways; bids on reinforced concrete or steel; bidders to examine location and to furnish plans and specifications with bids; concrete bridges to have wing walls and hand railing 3 ft. high to end of wing walls.

Bridge Construction.—Dallas County Commrs., Chas. E. Gross, County Auditor, Dallas, Tex.—Bids until June 17 to construct 2-ft. reinforced concrete bridge across Rawhide Branch; plans and specifications with J. F. Witt, County Engr.

Bridge Construction.—Baltimore (Md.) Board of Awards, City Hall.—Bids until June 23 to reconstruct old Chase St. bridge on Rental St. over Western Maryland Ry.; specifications and proposal sheets furnished by City Engineering Dept.; H. K. McCay, City Engr.

Bridge Construction Machinery.—Madison County Highway Com., S. W. Brown, Secy., Marshall, N. C.—Bids until June 22 to construct 676-ft. bridge, requiring about 420,000 lbs. steel and 600 yds. concrete; plans on file office J. B. Clingman, Engr., Marshall.

Bridge Construction.—Cabell County Commrs., R. S. Douthat, Clerk, Huntington, W. Va.—Bids until July 6 for concrete work for bridge over Chesapeake & Ohio Ry. Co.'s right of way at west end of old bridge across Mud River near Milton; plans and specifications by Oliver & Maupin, Engrs., Huntington.

Bridge Steel.—See Steel.

Bucket (Excavating).—Hughes Specialty Well Drilling Co., 96 Ashley Ave., Charleston, S. C.—Second-hand clam-shell or orange-peel bucket for excavating sand pit.

Building Material, etc.—Paul E. Meeting, Henryetta, Okla.—All material for store building to cost \$7200.

Building Materials.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 29 for delivering sheet and structural steel, terra-cotta tile, roofing material and granite tailings at Washington Navy-yard.

Building Material.—Alexander Drug Co., Oklahoma City, Okla.—Building material for \$125,000 warehouse and laboratory building.

Burlap.—See Dyers' Supplies, etc.—General Mill Supply Co.

Buttons (Metal), etc.—John Murray, manufacturers' agent, 24 Howard St., Glasgow, Scotland.—Correspond with manufacturers of metal buttons, braces and strap sizes for men's dungaree clothing; also buckles for back straps; manufacturers to send samples and prices and say if in stock or to make bond before delivery; also buffalo horn tea knives and bone salt shakers.

Cable.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 22 for delivering at naval station, Key West, Fla., quantity of cable; apply for proposals to navy pay office, Key West, or to Bureau.

Cases (For Bottling Works).—See Bottles, Cases, etc.

Cement Brick Machinery.—John C. Davis, Oxford, N. C.—Catalogues and prices on cement-brick machinery.

Carousels.—C. L. Tucker, Razor, Tex.—Data and prices on merry-go-rounds.

Chemical Auto Truck.—Fire Dept., Joe Turner, Fire Chief, Yoakum, Tex.—Will purchase 240 or 250-gal. chemical auto truck, capacity for carrying 500 ft. standard fire hose and 2 light, rough ladders.

Chemicals.—See Dyers' Supplies, etc.—General Mill Supply Co.

Chocolate Machinery.—See Confections Machinery.—T. M. Sokuler, Moscow, Russia.

Clothespin Machinery.—Chas. N. Braun, 1311 E. Lewis St., Fort Wayne, Ind.—Addresses of manufacturers of wire-working machines for making springs for clothespins; also of makers of machinery for manufacturing all-wooden clothespins (wood fork type).

Coal.—U. S. Engr. Office, Jacksonville, Fla.—Bids until June 28 to furnish 4000 tons coal; information on application.

Coal.—U. S. Engr. Office, Jacksonville, Fla.—Bids until June 28 for furnishing 4000 tons coal.

Conveyors.—See Corn Meal Mill, etc.—Alachua County Milling & Produce Co.

Corn Meal Mill, etc.—Alachua County Milling & Produce Co., Stafford Burgis, Mgr., Gainesville, Fla.—Corn shucker, sheller and cleaner for 125 bus. hourly; drykiln, 60 bus. hourly; mills for soft corn meal and feed, 30 bus. hourly; elevators, conveyors, etc.

Confectionery Machinery.—T. M. Sokuler, Moscow, Russia.—Data and prices on American product for confections and chocolate; that is, cocoa beans, cocoa butter, machines for making chocolate and confections, and all tools for confectioners.

Conveying Machinery.—See Electrical Machinery, etc.—A. A. Northen.

Crusher.—See Electrical Machinery, etc.—A. A. Northen.

Cranes (Locomotive, Wrecking).—J. G. Skelton, Room 1102 Virginia Railway & Power Bldg., Richmond, Va.—Locomotive wrecking crane, 20 to 30 tons lifting capacity; first-class condition. Give price and location for inspection first letter.

Crusher (Rock).—Hernando County Commrs., M. H. Snow, Clerk, Brooksville, Fla.—Bids until June 26 for purchase of rock-crushing outfit.

specifications obtainable from F. Shutts & Sons, Lake Charles, for \$5.

Drykilns.—See Corn Meal Mill, etc.—Alachua County Milling & Produce Co.

Dyers' Supplies, etc.—General Mill Supply Co., Charlotte, N. C.—To correspond with manufacturers of and dealers in supplies for dyers and dyehouses, soda ash, caustic soda, alum for filtration and water plants, burlap, starch for cotton mills, etc.

Dryer and Pan.—See Electrical Machinery, etc.—A. A. Northen.

Electric-light Plant Franchise.—City, Winston J. Ross, Secy. City Council, Ft. Thomas, Ky.—Bids on franchise for electric-light plant.

Electrical Equipment.—Alexander Drug Co., Oklahoma City, Okla.—Electrical equipment for \$125,000 warehouse and laboratory building.

Elevators.—Alexander Drug Co., Oklahoma City, Okla.—Elevator for \$125,000 warehouse and laboratory building.

Electrical Machinery.—See Forges, Cranes, etc.—Bureau Supplies and Accounts.

Electrical Machinery, etc.—A. A. Northen, V. P., First National Bank, Ashland, Ala.—50 to 75 H. P. electric motors; electrically driven pump with 6-in. discharge; conveying machinery; 4000 ft. 6-in. pipe; 2000 ft. 8-in. pipe; 2000 ft. 12-lb. rails; cylindrical dryer for reduced ores; 12-ft. dry pan; jaw crusher with daily capacity 200 tons; 2 sets crushing rolls; 4 French

Commerce, Quincy; Commercial Club, Tacoma, and Chamber of Commerce, Portland.

Electric-light Plant.—See Waterworks, Electric-light Plant and Sewers.—City of Dayton, Va.

Elevators (Grain).—See Corn Meal Mill, etc.—Alachua County Milling & Produce Co.

Elevator.—Jefferson County Commrs., J. F. Jefferson, County Clerk, Beaumont, Tex.—Bids until June 28 to install passenger elevator in county courthouse; plans and specifications with Habin & Beck, Architects, 25-17 Blanchette Estate Bldg., Beaumont.

Engine (Hoisting).—Samson Smith, Engr., Mineral, Va.—Hoisting engine; single drum, 18 to 24 in. link motion locomotive firebox; for prospecting shaft-sinking; second-hand, good condition.

Engine (Hoisting).—Jewel Pyrites Mining Co., Samson Smith, V. P., Mineral, Va.—25 H. P. hoisting engine; second-hand.

Engine (Oil).—Pidgeon-Thomas Iron Co., Memphis, Tenn.—30 or 60 H. P. engine, burning gasoline or kerosene, second-hand; first-class condition; state age, condition and price.

Exhaust System.—Milton W. Bosley & Co., Bayard and Nanticoke Sts., Baltimore, Md.—Data and prices on exhaust system for woodworking plant.

Evaporators.—See Distilling Equipment. Bureau of Supplies and Accounts. (Also see Turbine, etc.)

Filling.—City of Bay St. Louis, Miss.—Bids, addressed to Jos. Cazeneud, until July 2 to complete filling, by auction dredge, behind seawall along waterfront; earth to be taken not nearer than 100 ft. or more than 350 ft. from wall; plans and specifications on file with R. L. O'Brien, Clerk Bond Com.

Fire Apparatus.—See Chemical Auto Truck—Fire Dept., Joe Turner.

Fire Escapes.—City of Birmingham, Ala.—Bids by Julian Kendrick, City Engr., 21 City Hall, until June 21 for putting fire escapes on city hall.

Flour.—Edgar Franklin & Co., 62 Basinghall St., London, E. C., England.—Best white flour in large quantities; packed in 280-lb. bags; c. i. f. English or French ports; net cash bankers' guarantee on arrival; if price is right could obtain contract for several 100,000 tons, delivery 10,000 tons weekly.

Flour Mill Machinery.—See Electrical Machinery, etc.—A. A. Northen.

Forges, Cranes, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 22 for delivering at Navy-yard, Norfolk, Douglas fir, acetylene pressure generator, furnishing and installing furnace, universal forging machine, asphalt, paving cement, furnishing and installing ventilating system, jib crane, cast-iron pipe and fittings, oxygen-hydrogen-electrolytic generating plant; apply for proposals to navy pay office, Norfolk, or to Bureau.

Gas Holder.—Birmingham-Tuscaloosa Ry. & Utilities Co., 1831 5th Ave., Birmingham, Ala.—Walter A. Allison, Consult. Engr., 403 Wister St., Germantown, Philadelphia, Pa.—Gas holder of 100,000 cu. ft. capacity.

Gas Franchise.—City of Fort Thomas, Ky.—Bids on gas franchise. Address Winston J. Ross, Secy. City Council.

Glass Tubings.—Surgical Supply Co., Maurice Weintraub, Mgr., Jacksonville, Fla.—Glass tubings for surgical supply plant.

Glass (Window).—See Structural Steel, etc.—Salvatore Azzopardi.

Grading.—Harris County Commrs., H. L. Washburn, County Auditor, Houston, Tex.—Bids until June 21 to grade Middleton, Rd. north about 3 mi. from Crosby Rd. to Bayou; plans and specifications on file with County Engr.

Hammer (Steam).—Hillyer & Sperring Co., P. O. Box 371, Jacksonville, Fla.—8000-lb. steam hammer; new or second-hand.

Hammers (Trip).—All-Metal Washboard Co., Columbia, S. C.—Addresses of manufacturers of trip-hammers or dies.

Heating Plant.—Alexander Drug Co., Oklahoma City, Okla.—Heating plant for \$125,000 warehouse and laboratory building.

Ice Water System.—Dallas County Commrs., Chas. E. Gross, County Auditor, Dallas, Tex.—Bids until June 17 to install ice-water system in courthouse; plans and specifications at office of H. A. Overbeck, Archt., 502 Juanita Bldg., Dallas.

Kitchen Cabinets.—Shannon Furniture Co., 14 W. 2d St., Tulsa, Okla.—Correspondence with manufacturers of high-grade kitchen cabinets.

Knives.—See Buttons (Metal), etc.—John Murray, manufacturers' agent, 21 Howard St., Glasgow, Scotland.

FOR the benefit of business concerns, engineers, contractors, machinery manufacturers, dealers and others who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department,

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Decorating.—See Painting, etc.—Secretary of the Interior.

Dies.—See Hammers (Trip).—All-Metal Washboard Co.

Distilling Equipment.—American Dynamite Co., Amherst, O.—Names and addresses of manufacturers of distilling equipment; for practical, not laboratory, use.

Distillers and Evaporators.—See Turbine, etc.—Bureau of Supplies and Accounts.

Distilling Equipment.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 29 to deliver distillers and evaporators; for proposals apply to navy pay office, Charleston, S. C., where equipment must be delivered, or to Bureau. (Also see Turbine, etc.)

Distilling Machinery.—R. K. Cronkrite, care Cowles & Mutscheller, Archts., Saginaw, Mich.—Correspond with manufacturers of machinery for distilling turpentine, pitch, etc., from gum pine.

Dock Construction.—Office H. L. Beck, Lighthouse Inspector, Charleston, S. C.—Bids until July 15 to construct creosoted timber wharf at site of new Lighthouse Depot on Ashley River; \$5 deposit required for each set of plans and specifications; blank proposals and specifications obtainable from Lighthouse Inspector.

Drainage System.—Calcasieu Parish, Sulphur Drainage Dist. No. 2, W. H. Managan, Prest., Westlake, La.—Bids until July 7 to construct about 15 mi. open ditches near Sulphur Mine Station; maps, profiles and

buhr mills; reels and sifters for flour milling; shafting, pulleys and belting; 8000 to 10,000 gal. horizontal closed stationary tank for oil storage; 3000-gal. tank of same type; second-hand; first-class condition.

Electrical Machinery, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 22 for delivering at Navy-yard induction motors, steel castings, recoil springs, mixing tanks, outfit for steering gear, exhauster, aluminum, acid-proof stoneware, steel tank, steel shaft, tubes and jackets, shell bands, sheet brass, North Carolina pine, poplar, wire cloth, sheet steel, tank car, wooden tubs, electric locomotive, wire rope, rubber gaskets, brick, brass rod, carbon steel, file cases, etc.; apply for proposals to Bureau.

Electrical Machinery, etc.—Panama Canal, Maj. F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until July 1 to furnish electrolytic oxyhydrogen generating plant, electric cable, cable end bells, circuit breakers, battery zincs, dry cells, galvanized corrugated roofing, glass lamp shades, soil pipe, pipe fittings, etc.; circular No. 335; copies obtainable from purchasing officer and officers of assistant purchasing agent at 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile, Galveston, Seattle and Los Angeles; also at Commercial Club, Kansas City; Chamber of

Levee Construction.—Third Mississippi River Dist., P. O. Box 404, Vicksburg, Miss.—Bids until June 26 to construct about 519,000 cu. yds. levee enlargement; further information on application.

Levee Construction.—Mississippi River Com., 1st and 2d Dists., Room 20, Customhouse, Memphis, Tenn.—Bids until June 26 to construct 700,000 cu. yds. levee work in Lower St. Francis Levee Dist.; information on application; E. M. Markham, Maj., Engrs.

Levee Construction.—Levee Comms. New Orleans Levee Dist., C. J. Donner, Secy., Suite 291, New Orleans Court Bldg., New Orleans, La.—Bids until June 22 to construct following work on Mississippi River: Southern Pacific R. R. terminal to U. S. Naval Station, 5th Dist., right bank of river; new levee; length 692 ft.; contents 11,720 cu. yds. earth. Aurora Levee, 5th Dist., right bank river; length about 5600 ft.; contents earthwork 10,000 cu. yds., sheet piling (Standard interlocking wood sheet piling, Martinez type), 5600 lin. ft., about 336,000 ft. B. M. reinforced concrete revetment or facing, about 30,000 sq. yds. Upper Stanton, 5th Dist., right bank of river; river side enlargement, length about 1913 lin. ft.; contents 22,000 cu. yds. of earth. Filling in borrow pits U. S. Government depot to lower end of Audubon Park, 6th Dist., left bank of river; length about 5036 lin. ft.; contents 86,000 cu. yds. earth. For further information as to location, plans, specifications, etc., address above office.

Levee Construction.—Tate County Supvrs., J. A. Wooten, Clerk, Senatobia, Miss.—Bids until July 5 to construct levee across Arkabutla Bottom at Blackburne bridge crossing; plans and specifications on file with Chancery Clerk.

Lock Gates (Steel).—U. S. Engr. Office, Wilmington, N. C.—Bids until July 19 to furnish steel lock gates.

Locomotive (Electric).—See Electrical Machinery, etc.—Bureau Supplies and Accounts.

Locomotives (Electric).—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Aug. 16 to furnish 12 electric towing locomotives for canal locks; blanks forms, etc. (circular No. 338), obtainable from this office and offices of assistant purchasing agents at 24 State St., New York; 614 Whitney-Central Bldg., New Orleans; and Fort Mason, San Francisco; also from U. S. Engr. offices at Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; also at Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma.

Lumber.—See Structural Steel, etc.—Salvatore Azzopardi.

Machine Tools, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 22 for delivering at Navy yard, Charleston, S. C., condenser tubes, cut-off saw, bending press, dovetailing and milling machines, turret lathes; apply for proposals to navy pay office, Charleston, or to Bureau.

Machine Tools.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 22 to furnish following: Hydraulic jib crane, delivery Norfolk, Sch. 8451; involute cutters, delivery Newport, R. I., Sch. 8455; flat-top turret lathe, Sch. 8474; dovetailing machine, Sch. 8466; universal milling machine, Sch. 8474; vertical milling machine, Sch. 8474; bending press, Sch. 8452; automatic cut-off saw, Sch. 8452; all delivery Charleston, S. C.

Mantels (Wood), etc.—Virginia Heating & Ventilating Co., Lynchburg, Va.—Data and prices on wood mantels and tile for mantels, bathroom, etc.

Manufactures.—D. A. Ruffman, P. O. Box No. 3, Petrograd, Russia.—To correspond with American manufacturers relative to introducing their products in Russia; for information of Mr. Ruffman apply to Arthur Colton Co. and Parke, Davis & Co., both of Detroit; H. H. Gross, First National Bank Bldg., and Lowrie Safe & Lock Mfg. Co., Chicago.

Manufactures.—Willy Lamot (of Antwerp), temporary address, Shardsighs, Halstead, Essex, England.—To correspond with American manufacturers relative to introducing all kinds of products after war has ended; represents several Belgian business men who have created an organization for this purpose.

Merchandise.—T. M. David, manufacturers' agent, present address 319 Clinton St., Brooklyn, N. Y.—Interested, for representation on commission in Brazil, in general

merchandise, including following: Embroideries, laces, general line dry goods, cotton and silk dress goods, cotton and silk ribbons, shawls and veils (wedding), silk thread (sewing and embroidery), hosiery, handkerchiefs, ladies' and children's ready-made white clothing, woolen stuff for ladies' wear, towel, table covers, ladies' underwear, men's underwear, straw and woolen hats, walking canes, linen shirts and collars, celluloid collars, neckties and materials for ties, curtains, boots and shoes, brushes, jewelry (cheap), cutlery, suspenders and garters, lumber for matches, leather (upper one), wheat flour, codfish, oysters, paints, varnishes, etc., oils for machines, barbed wires, inks (for journals), writing and journal paper, buttons. (Brazil address in 15 Rua General Carneiro, S. Paulo.)

Metals.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 22 to furnish 1985 lbs. round and hexagon brass rod, delivery Washington, Sch. 8456; 4600 lbs. soft plate copper, 32x140 in., delivery Boston, Sch. 8457; 17,000 lbs. soft black bar steel, delivery Washington, Sch. 8456; 73,000 lbs. hot-rolled or forged carbon steel, delivery Washington, Sch. 8456; 72,495 lbs. black medium plate steel, delivery Brooklyn, Sch. 8457; 49,000 lbs. sheet soft steel, delivery Washington, Sch. 8456; 216,000 lbs. galvanized sheet steel, delivery Washington, Sch. 8456.

Metal-working Machinery.—See Strainers (Well) Machinery.—Jones Strainer Mfg. Co.

Milling (Corn, etc.) Machinery.—See Corn Meal Mill, etc.—Alachua County Milling & Produce Co.

Nails.—Limestone Lumber Co., Maysville, Ky.—Charcoal iron shingle nails.

Office Furniture, etc. (Desks and Rall).—See Roasters (Coffee), etc.—Scudders-Gale Grocer Co.

Packing Machines.—See Roasters (Coffee), etc.—Scudders-Gale Grocer Co.

Painting, etc.—Secretary of the Interior, Washington, D. C.—Duplicate bids until July 21 for plastering, painting and decorating 7th St. corridor, third floor of Patent Office Bldg., at Washington; plans and specifications at office of Chief Clerk of the Dept.

Paving.—Port Comms., Ernest M. Loeb, Prest., Suite 200, New Orleans Court Bldg., New Orleans, La.—Bids until June 23 to pave with small granite blocks on 6-in. concrete base roadway approaches at foot of Clouet and Desire Sts.; plans, specifications, proposal forms, etc., on file with J. Devereux O'Reilly, Engr., Suite 200, New Orleans Court Bldg., by whom full sets will be furnished for \$5.

Paving, etc.—Winter Park, Fla., Percy Dale, Clerk.—Bids until July 13 to curb East Park Ave. from Henkel block to Lincoln Ave.; also to build cement sidewalks.

Paving.—City Comms., Galveston, Tex.—Bids until June 24 to pave Ave. A from intersection with 29th and 37th Sts.; 663 sq. yds. vitrified brick pavement, 88 cu. yds. extra concrete and 248 lin. ft. concrete bulkheads; plans and specifications obtainable from A. T. Dickey, City Engr.; H. O. Sappington, Commr. of Streets and Public Property.

Paving.—Baltimore (Md.) Board of Awards, City Hall.—Bids until June 23 to grade, curb and pave on concrete base following streets: Contract No. 119—Camden St. from Paca to Eutaw, granite block, 1850 sq. yds.; Contract No. 120—Tyson St. from Saratoga to Center and from Monument to Richmond, Hargrove alley from Federal to Trenton St., Hunter alley from Read to Preston St., Trenton St. from Hargrove alley to Calvert St., and alley south of Monument St. from Howard to Tyson St.; vitrified block, 9100 sq. yds.; specifications and proposal sheets furnished by Paving Com., R. Keith Compton, Chrmn., City Hall, for \$5; plans and profiles on file with Mr. Compton.

Paving.—Board of Public Works, Roger G. McGrath, Secy., Louisville, Ky.—Bids until June 23 to pave various streets, including sections of Griffith Ave., 35th St., Coral Ave., Main St., etc.; bidders to submit sample of vitrified block; drawings and specifications on file with Board of Public Works.

Paving.—Port Comms., Ernest M. Loeb, Prest., Suite 200, New Orleans Court Bldg., New Orleans, La.—Bids until June 23 to pave with small granite block on 6-in. concrete base roadway along crown of levee from Barracks St. to Esplanade Ave.; plans, specifications, proposal forms, etc., on file with Engr., J. Devereux O'Reilly, Suite 200, New Orleans Court Bldg., by whom full sets will be furnished for \$5.

Pennants.—J. Leo Kolb, 923 New York Ave. N. W., Washington, D. C.—To buy 8000

to 12,000 pennants for Holy Name Society parade next October.

Piling (Sheet).—Hughes Specialty Well Drilling Co., 96 Ashley Ave., Charleston, S. C.—Second-hand sheet piling, 20-ft. lengths, to curb shaft finished 8 ft. inside diam., 40 ft. deep.

Piping, etc.—See Forges, Cranes, etc.—Bureau Supplies and Accounts.

Piping.—J. J. Carter & Son, Franklin, Tex.—Prices, delivered, on carload black and galvanized standard pipe 3/4 to 3-in. diam.

Piping.—J. Mason Hawk, Commr. Public Property, Covington, Ky.—Bids until July 8 to furnish 996 tons 24-in. class "C" pipe, 2591 tons 24-in. class "D" pipe and 20 tons special castings; specifications furnished on application to Clerk of Commr. of Public Property or Geo. Hornung, Consult. Engr., Wool-Sack Bldg., Newport.

Piping.—Thrall-Malone Oil Co., J. N. Ballard, Secy., Whitney, Tex.—Prices on 1000 ft. 6 1/4-in. pipe.

Piping.—See Electrical Machinery, etc.—A. A. Northern.

Plastering.—See Painting, etc.—Secretary of the Interior.

Piping.—Birmingham-Tuscaloosa Ry. & Utilities Co., 1831 5th Ave., Birmingham, Ala., Walter A. Allison, Consult. Engr., 403 Wister St., Germantown, Philadelphia, Pa.—2 to 8-in. gas mains; also to contract for laying mains.

Powder.—See Revolvers, etc.—Edgar Franklin & Co.

Pump.—See Electrical Machinery, etc.—A. A. Northern.

Posts (Iron).—Commissioner, General Land Office, Washington, D. C.—Bids, in duplicate, until July 14 to furnish iron posts, with brass caps, for public-land survey corners, for fiscal year 1916; plans and specifications on application to chief clerk of General Land Office.

Pump.—Wm. Seymour, 5117 Kenwood Ave., Chicago, Ill.—Underwriters' fire pump; 750 to 1000 gals.; electric; buy for cash or trade or sell 1000 gals. steam pump.

Pumps.—Jewel Pyrites Mining Co., Samson Smith, V. P., Mineral, Va.—Several pumps.

Rails.—See Electrical Machinery, etc.—A. A. Northern.

Revolvers, etc.—Edgar Franklin & Co., 62 Basinghall St., London, E. C., England.—100,000 automatic revolvers; shells; guncotton; smokeless powder.

Railroad Construction, etc.—North Carolina Traction Co., B. D. Hammond, Prest., P. O. Box 21, Station A, Boston.—Open bids July 1 on railroad construction and equipment; 137 mi. railway from High Point, N. C., to Christiansburg, Va.

Railroad Equipment, etc.—Anthony Creek Lumber Co., White Sulphur Springs, W. Va.—Narrow or standard gauge railroad equipment, rails, etc., and possibly tractors.

Retaining Wall Materials.—E. C. Harnsberger, care Page Milling Co., Luray, Va.—Data, samples and prices on following materials for terrace retaining wall 3 ft. 6 in. high (above grade) and 400 ft. long: Steel for reinforcing wall, wall ties to attach brick or stone facing 4 in. thick; face brick, all colors; stone for facing and coping; finished wall for coping to be 8, 10 or 12-in. wide.

Road-building Material.—F. P. Heifner, Fort Myers, Fla.—To correspond with sellers of road-building material.

Road Construction.—Copiah County, Dist. 5, Hazlehurst, Miss.—Opens bids July 5 on gravel road construction; \$150,000 available; Xavier A. Kramer, Engr., Magnolia, Miss.

Road Construction.—Marshall County Comms., J. E. Chase, Clerk, Moundsville, W. Va.—Bids until June 17 to grade and macadamize Fairmont pike in Union Dist. as far as \$50,000 will complete same; plans and specifications on file with J. E. Chase, Moundsville, and T. J. Bartrug, Engr., Alexander Bldg., Moundsville.

Road Construction.—Frederick County Comms., John W. Holter, Prest., Frederick, Md.—Bids until July 3 to build section State-aid highway, about 1.04 mi., through town of Brunswick and along Brunswick-Petersville Rd. between B. & O. depot and State Rd.; 2 separate bids; portion in the town, one bid, along Brunswick-Petersville Rd., another; plans and specifications obtainable office of State Roads Com., 601 Garrett Bldg., Baltimore.

Road Construction.—Oldham County Comms., W. D. Pinkston, Clerk, LaGrange, Ky.—Bids until June 25 to construct road from Crestwood to Buckner, 4 6-10 mi.; bids

to be made in sections of 2 3-10 mi. each or for entire length; plans and specifications on file with County Clerk.

Road Construction.—Fayette County Comms., Fayette, Ala.—Bids until July 6 to gravel part of Fayette and Tuscaloosa Rd.; expenditure \$4616.26; W. S. Keller, State Highway Engr., Montgomery.

Shells.—See Revolvers, etc.—Edgar Franklin & Co.

Road Machinery.—J. W. Dean, Jackson, Ky.—New or second-hand 8-ton steam road roller; also macadam sprinkler.

Road Machinery, etc.—State Highway Commr., Oklahoma City, Okla.—Literature relative to road machinery, tools, construction materials, etc. It is also suggested that this class of literature be mailed to the County Comms. of the various counties of Oklahoma at their respective county-seats.

Road Oiling.—Baltimore (Md.) Board of Awards, City Hall.—Bids until June 16 to oil about 4.9 mi. macadam road at Loch Raven, Improvement of Gunpowder Supply, contract No. 42; plans, specifications obtainable from Robt. L. Clemmitt, Acting Water Engr., City Hall, for \$5.

Roofing.—See Building Materials.—Bureau of Supplies and Accounts.

Roasters (Coffee), etc.—Scudders-Gale Grocer Co., 12th and Poplar Sts., St. Louis, Mo.—Prices on coffee-roasting plant, weighing machines, grocers' sundry packing machines, platform trucks, paper-tube carriers (office), wood office rails and office desks.

Roofing (Corrugated Steel).—Food Products & Mfg. Co., C. L. Wiseman, Aust. Secy., McCoolle, Md., P. O. at Keyser, W. Va.—45 squares 2 1/2-in. corrugated steel roofing with painted or galvanized 28 or 29 gauge.

Safes.—See Bank Equipment.—First National Bank.

Saws.—See Machine Tools, etc.—Bureau Supplies and Accounts.

Sawmills.—Robt. Benton, 1815 10th St., Wichita Falls, Tex.—Names and addresses of manufacturers of small sawmills and shingle mill.

Scales.—See Roasters (Coffee), etc.—Scudders-Gale Grocer Co.

School Equipment.—F. W. Andrews, Oswego, S. C.—Bids on desk, auditorium chairs and blackboards.

Sewer Construction.—Board of Public Works, Madisonville, Ky.—Bids until July 1 to construct 8666 ft. sanitary sewers; plans and specifications by J. M. Flanagan.

Sewer Construction.—City of Kirksville, Mo., C. E. Murrell, Mayor.—Bids until June 28 to construct storm sewer system in Joint Storm Sewer Dist. No. 3; 257 ft. 36-in., 640 ft. 30-in., 485 ft. 24-in., 510 ft. 18-in., 556 ft. 15-in., 565 ft. 12-in., 600 ft. 10-in. storm sewers, with manholes, catch-basins, etc.; plans and specifications on file with O. D. McKasson, City Clerk, and C. V. Downing, Engr.

Sewer Construction.—See Water-works, Electric-Light Plant and Sewers.—City of Dayton, Va.

Sewer Construction.—City Comms., City Hall, Tulsa, Okla.—Bids until June 17 to construct complete sanitary sewer system, including inlets, manholes, etc., in Sewer Dist. No. 98; interior diam. 8 in.; plans, profiles and specifications on file with T. C. Hughes, City Engr.

Shaper.—Tallapoosa Mills, Tallapoosa, Ga.—Second-hand 26-in. shaper; A1 condition; cheap.

Shell Machinery.—Ashmore, Benson, Pease & Co., Ltd., Stockton-on-Tees, England.—Machinery and presses for manufacturing high-class shells of all sizes; only makers who can guarantee delivery from stock or immediate delivery can, at the moment, be considered; forward catalogues and price list to "Managing Director."

Shingle Mills.—Robt. Benton, 1815 10th St., Wichita Falls, Tex.—Names and addresses of manufacturers of small shingle mill and sawmills.

Shoe Machinery, etc.—W. J. Davis, Owensville, Mo.—Names and addresses of shoe machinery manufacturers, tanners and shoe supply companies.

Steel.—Surgical Supply Co., Maurice Weintraub, Mgr., Jacksonville, Fla.—Jesup steel, rods and finest annealed steel to forge forms or shapes so that steel will still retain annealing properties and may be tempered in fish oil for spring temper; suitable for surgical instruments.

Strainers (Well) Machinery.—Jones Strainer Mfg. Co., W. L. Moore, Prest., Lexington, Tenn.—Opens bids July 1 on machinery to manufacture well strainers.

Steel.—Board of Public Service, Room 315 New City Hall, St. Louis, Mo.—Bids until June 29 to furnish structural steel for 8th section of municipal bridge over Mississippi River at St. Louis; reported cost \$1,000,000; plans, specifications, form of contract, etc., obtainable from Prest. Board of Public Service.

Steel (Structural), etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until July 12 to furnish or furnish and erect structural steel and accessory parts for shed on Pier No. 7. Plans and general information relating to this circular (No. 937) obtainable from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans; Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Structural Steel, etc.—Salvatore Azzopardi, Malta.—To correspond (relative to representation) with manufacturers of structural steel, window glass, timber, etc.

Sweeping Machines (Street, Motor).—P. H. Tucker, City Clerk, Roanoke, Va.—Bids until June 29 on motor street sweeping machines; F. L. Gibboney, City Engr.

Tanners.—See Shoe Machinery, etc.—W. J. Davis.

Tanks.—See Electrical Machinery, etc.—A. A. Northern.

Tanks.—See Windmills and Tanks.—W. A. Rayfield & Co.

Tile.—Virginia Heating & Ventilating Co., Lynchburg, Va.—Tile for mantels, bathroom, etc. (See Mantels (Wood)).

Tractors.—See Railroad Equipment, etc.

Trucks (Platform).—Scudders-Gale Grocer Co., 12th and Poplar Sts., St. Louis, Mo.—Platform trucks. (See Roasters (Coffee), etc.)

Tubes (Carrier).—See Roasters (Coffee), etc.—Scudders-Gale Grocer Co.

Tubes (Condenser).—See Machine Tools, etc.—Bureau Supplies and Accounts.

Turbine, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until June 29 to dismantle and rebuild turbine, and to deliver evaporators and distillers and white zinc oxide to Norfolk Navy yard; for proposals apply to navy pay office at Norfolk or to Bureau.

Vault Door.—See Bank Equipment.—First National Bank.

Water-works Franchise.—City of Fort Thomas, Ky.—Bids on franchise for water-works. Address Winston J. Ross, Secy. City Council.

Water-works Construction, etc.—City, E. B. Butler, Mayor, Covington, Va.—Bids until July 12 to furnish materials and construct 2,000,000-gal. concrete line two-compartment reservoir, furnish cast-iron pipe, supply specials and valves, etc.; plans and specifications at office Harry Stevens, Consult. Engr., Union Trust Bldg., Washington, D. C., and of Town Clerk, Covington; copies forwarded upon request to Engr.

Water-works, Electric-light Plant and Sewers.—City of Dayton, Va., J. H. Rhodes, Recorder.—Bids until June 22 for water-works, electric-light plant and sewer construction; specifications on application; plans on file and sent for \$2.

Windmills and Tanks.—W. A. Rayfield & Co., Architects, Birmingham, Ala.—Catalogues and prices on windmills and tanks.

Wire Spring Machinery.—Chas. N. Braun, 1311 E. Lewis St., Fort Wayne, Ind.—Addresses of manufacturers of wire-working machines for making clothespin springs. (See Clothespin Machinery.)

Woodworking Machinery.—See Clothespin Machinery.—Chas. N. Braun.

Woodworking Machine.—R. I. Rushing, 2901 Magnolia St., El Paso, Tex.—Prices on sander.

Woodworking Machinery.—See Shaper.

Hagar Portland Cement Co.

The Hagar Portland Cement Co., projected by Edward M. Hagar for the purpose of organizing a company to acquire and operate a chain of cement plants to cover the territory between the Atlantic seaboard and the Rocky Mountains, has been chartered in Maine with capital stock of \$20,000,000, all common, and

with Edgar M. Hagar, president; Morris Metcalf, vice-president; B. H. Radar, vice-president and sales manager; Gordon Wilson, secretary and in charge of cost accounting; Leonard Wesson, assistant to president in operation and construction; J. P. Beck, assistant to president in extension work; C. W. Lyon, engineer of economies, and J. H. Barbazette, superintendent of construction. Pending the election of a permanent treasurer, the office will be filled by Gordon Wilson. The general offices of the company are in Chicago.

Practical Applied Mathematics. By Joseph W. L. Hale. Publisher, McGraw-Hill Book Co., New York. Price \$1.00.

In organizing trade apprentice schools difficulty has been experienced in securing a textbook practically adapted to the needs of such school. This situation led Professor Hale to develop a series of instruction sheets believed to be thoroughly practical. The material included in this work embodies the results of five years' experience in the organization and development of a system of railroad shop apprentice schools as well as extended investigations of the work of the public, private, trade, vocational and corporation schools of manufacturing industries and railroads in this country and abroad, and it has been made sufficiently broad to apply to schools in the mechanical trades generally and to be used to advantage in technical branches in the public schools, as well as in trade and vocational schools, either as a regular or as a supplementary textbook.

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Birmingham.—The Jefferson Trust Co. is organizing with Snowden McLaughly of Gadsden Prest. Business is to begin July 15. This succeeds the Jefferson County Savings Bank.

Ala., Tallahassee.—First National Bank of Tallahassee has made application to organize; capital \$25,000; organizers, T. W. Brunson, S. P. Storrs, H. K. Bailey, W. A. Jordan and R. E. Seibles.

Fla., Boynton.—Boynton Builders & Investment Co. has filed articles of incorporation; capital \$10,000. A. C. Shepard is Prest.; S. T. Linnhart, V.-P., and A. E. Pearson, Secy. and Treas.

Fla., Minkka.—The Bank of Minkka City is organized and will begin business in about thirty days. L. M. Fouts of Boca Grande is interested.

Fla., Tampa.—The El Bien Publico, capital \$10,000, is being organized to do an insurance business. Organizers: Jose R. Avellanal, Manuel Fuente, Ramon Colome and Arturo Capablanca.

Ga., Atlanta.—The Georgia Mortgage Bond Co. is organized with \$100,000 capital; J. O. Wynn, Prest.; W. L. Pomeroy, Secy. and Treas.; directors, Dr. W. J. Blalock, John W. Grant, Arthur G. Powell, Frank S. Ellis, W. L. Pomeroy, Boling H. Jones, Paul B. Trammell of Dalton, and J. G. Lewis of Kennesaw.

Ga., Donaldsonville.—The Planters' Bank of Donaldsonville is chartered; capital \$25,000; E. S. Spooner and others, incorporators.

Ky., Maysville.—The State Trust Co. is organized and business is to begin soon. Chas. D. Pearce of Louisville and others are interested.

Ky., Greenville.—The First National Bank has absorbed the Muhlenberg County Savings Bank, merger to become effective July 1. W. A. Wickliffe is Prest. First National.

Md., Baltimore.—The Baltimore Commercial Bank, capital \$500,000, has elected the following officers: W. M. McCormick, Prest.; Robt. S. Mooney, V.-P.; Robert A. Welsh, Cash.; Gwynn Crowther, Asst. Cash. Business is to begin in August. (Recently noted.)

Md., Brunswick.—The Bank of Brunswick, recently inc'd. with \$25,000 capital, has elected the following officers: J. P. Karn, Prest.; J. Lee Simmons, 1st V.-P.; Joseph House, 2d V.-P.; W. O. Rau of Harpers Ferry, W. Va., Cash., and J. D. Brown of

Lovettville, Cash. Business is to begin July 1.

Miss., Rosedale.—First National Bank of Rosedale, a conversion of the Bank of Rosedins, Prest.; D. S. Farrar, V.-P., and W. F. Wall, Cash. Business began June 5.

N. C., Ahsokle.—The Guarantee Company, Inc., is organized with the following directors: W. L. Curtis, Prest.; C. A. Perry, V.-P.; J. O. Carter, Secy. and Treas.; C. C. Hogard, E. Hays, E. J. Gerock, J. R. Garrett, J. W. Godwin.

N. C., Durham.—Durham Loan & Trust Co. has begun business with \$145,000 capital. T. C. Worth is active V.-P. The general trust business will be in charge of John Sprunt Hill, T. C. Worth and R. P. Reade.

N. C., Marshall.—Marshall Realty, Collection & Insurance Agency, Inc., capital \$10,000, began business June 1. W. B. Ramsey, Prest.; Guy V. Roberts, V.-P.; Roberta Rogers, Secy. and Treas.

S. C., Olanta.—First National Bank of Olanta is chartered; capital \$25,000; Julien C. Rogers, Prest., and D. E. Fraser, Cash. This is a conversion of the Bank of Olanta.

Tenn., Memphis.—Southern Bond & Adjustment Co., 358 Randolph Bldg., inc'd.; capital \$10,000. A. H. Gross, Prest.; C. C. Bryant, V.-P.; H. H. Clark, Secy. and Treas. Business began June 1.

Tex., Kaufman.—The Farmers and Merchants' National Bank is approved; capital \$75,000; organizers, Geo. W. Smith, Wood Nash, Nestor Morrow, C. H. Allen, T. M. Yorbaugh and Shannon Jones.

Tex., Lavan.—Guaranty State Bank is organized with S. W. Sibley, Prest., and A. F. McDonald, Cash.

Tex., Polytechnic.—The Young Men's Business League is reported planning to organize a bank. L. D. Ballard of Newlin, Tex., is said to be interested.

Va., Hopewell.—Farmers and Mechanics' Bank, authorized capital \$10,000 to \$50,000, is being organized. Benjamin Lovenstein of Richmond and H. J. Watkins, Jr., formerly of the First National Bank of South Boston, are said to be interested.

Va., City Point.—Farmers and Mechanics' Bank chartered; capital \$50,000; B. R. Walters, Prest., and J. W. Long, V.-P., both of Washington; H. J. Watkins, Jr., Secy. and Cash., Petersburg, Va.

W. Va., Huntington.—A building and loan association capitalized at \$100,000 is being organized by F. H. Medley, T. F. Bailey, Jr., W. E. Minter, C. L. Rice, C. W. Campbell and others.

W. Va., Ravenswood.—First National Bank of Ravenswood has made application to organize; capital \$35,000. Organizers: W. M. Arnold, C. E. Mason, J. H. Wetzel, W. A. Ellis, J. T. Watts and A. E. Allen.

NEW SECURITIES

Ala., Birmingham.—Bids will be received until noon July 15 for \$750,000 funding and \$500,000 municipal 5 per cent. 30-year bonds. Address Board of Commrs., Geo. B. Ward, Prest., and H. S. Ryall, City Clerk.

Ala., Girard.—Election is to be held to vote on \$20,000 public improvement bonds. Earl Morgan is Mayor.

Ala., Huntsville.—The \$40,000 5 per cent. 30-year high-school bonds recently voted and sold have been declared illegal, and another election will be called immediately. J. D. Humphreys is Mayor.

Ala., Jasper.—Walker county has sold \$50,000 road bonds to Otto Marx & Co., Birmingham.

Fla., Arcadia.—No satisfactory bids were received June 8 for the \$210,000 6 per cent. 20-30-year \$500 bonds Special Road and Bridge Dist. No. 1, De Soto county, and new bids will be asked. Address Board of County Commrs., A. L. Durrance, Clerk.

Ala., Tuscaloosa.—City will probably issue bonds for following purposes: \$25,000 to pay floating indebtedness and \$25,000 for municipal wharf on Warrior River. Address The Mayor.

Fla., Bradentown.—Election is to be held July 13 to vote on \$25,000 water-works and \$30,000 street 6 per cent. 30-year bonds. C. A. Birney is Mayor and Wm. Kean City Clerk.

Fla., Clearwater.—Following districts in Pinellas county contemplate issuing bonds: Curlew, \$5000; Ozona, \$4000; Wall Springs, \$3000. Dixie M. Hollins is Supt. Pinellas County at Clearwater.

Fla., Daytona.—Election is to be held about July 10 to vote on \$40,000 special tax school Dist. bonds. W. M. Hankins is Chrmn. School Board.

Fla., DeLand.—\$30,000 6 per cent. improve-

ment bonds have been purchased by the Volusia County Bank at \$1200 premium.

Fla., De Land.—\$400,000 Volusia county road bonds are voted. Date for opening bids not yet decided. Address County Commissioners, S. D. Jordan, Clerk.

Fla., De Land.—Election is to be held in De Land Dist., Volusia county, July 13 to vote on \$350,000 road bonds. Address County Commissioners.

Fla., Fort Myers.—Bids will be received until 2 P. M. July 5 for \$177,500 6 per cent. 30-year \$500 bonds Special Road and Bridge Dist. No. 1, Lee county; dated July 1, 1915. H. A. Hendry is Clerk Board of County Commrs. Further particulars will be found in the advertising columns.

Fla., Lake Alfred.—\$4000 Lake Alfred Special Tax School Dist. bonds are voted. Address Board of Trustees, C. A. Parker, Supt. and Secy.

Fla., Manatee.—Election is to be held in Manatee county July 19 to vote on \$110,000 bridge and road improvement bonds. Address County Commrs.

Fla., Miami.—\$100,000 Dade county bonds have been purchased by local banks. S. A. Belcher is Chrmn. County Commrs.

Fla., Madison.—\$10,000 6 per cent. municipal refunding notes (not bonds) have been voted, and part of issue has already been taken by local banks. R. H. Rowe is Mayor.

Fla., Ocala.—Bids will be received until 3 P. M. June 26 for \$55,000 5 per cent. water-works bonds maturing Aug. 1, 1933, and \$100,000 5 per cent. sewerage bonds maturing Jan. 1, 1935, to Jan. 1, 1945, inclusive. Address E. J. Crook, Secy. Bd. of Bond Trustees. R. S. Hall is Chrmn. Further particulars will be found in the advertising columns.

Fla., Orange City.—Election is to be held in Orange City Road Dist., Volusia county, July 13 to vote on \$90,000 bonds. Address County Commrs. at De Land.

Fla., Pensacola.—\$10,000 fire department and \$30,000 water department 6 per cent. bonds are voted. A. Greenhut is Mayor.

Fla., Port St. Joe.—Bids will be received until 10 o'clock August 3 by J. D. Parish, Chrmn. Calhoun County School Board, or J. F. Durham, County Supt., for \$4000 5 per cent. \$500 school-building bonds, dated Aug. 3, 1915, and maturing 1924 to 1931, inclusive.

Fla., Starke.—Election to vote on \$26,000 sewerage and \$16,000 paving bonds is to be held Oct. 5. C. A. Futch is Clerk.

Fla., St. Augustine.—\$12,500 6 per cent. 10-year Elkton Drainage Dist., St. Johns county, bonds have been purchased at par by Joseph and J. H. Lynn. Wallace Snow is Clerk Board of County Commrs.

Fla., St. Petersburg.—\$105,000 6 per cent. 25-year Special School Tax Dist. No. 3, St. Petersburg, Pinellas county, school bonds defeated.

Fla., Tampa.—Election is to be held July 2 to vote on \$3000 bonds Special Tax School Dist., Brandon (not Seffner, as previously stated.) Wm. Schneider is Chrmn. Board of Public Instruction, Hillsborough County.

Ga., Atlanta.—Steps are to be taken to issue \$1,000,000 school bonds. Address Mayor Woodward.

Ga., Cartersville.—Election is to be held July 10 to vote on \$85,000 bonds for sewers and other improvements. Address Mayor Young.

Ga., Dublin.—The election ordered for June 8 to vote on \$50,000 city ice plant and abattoir bonds was called off. C. A. Weddington is Mayor.

Ga., East Lake.—\$30,000 5½ per cent. 30-year school, water, sewer and street bonds recently voted have been validated by Judge Reld. Howard Geldert is Town Clerk.

Ga., Greensboro.—Election is to be held July 3 to vote on \$50,000 5 per cent. Greene county bridge and sewer \$1000 bonds. S. H. Willis is Clerk.

Ga., Lafayette.—Election is to be held in Walker county July 7 to vote on \$75,000 courthouse and \$50,000 road bonds. J. C. Young is Chrmn. Board County Commrs., Green Bush.

Ga., Leesburg.—Election is to be held in Lee county July 7 to vote on \$27,500 road and \$7500 bridge 1-20-year bonds. Address E. J. Stocks, Chrmn. Board County Commrs.

Ga., Stone Mountain.—\$21,000 5½ per cent. 30-year \$500 water and school bonds defeated.

Ga., Tallapoosa.—Election to vote on \$40,000 water-works and sewerage and \$25,000 school 6 per cent. bonds will be held June 23. Address The Mayor.

Ga., Thomasville.—Election is to be called to vote on bonds for public improvements,

including paying, auditorium, water, light and ice plant. Address The Mayor.

Ga., Toccoa.—Bids will be received until noon July 15 by H. J. Cox, City Clerk, for \$30,000 5 per cent. \$1000 electric-light bonds, maturing Jan. 1, 1917, to Jan. 1, 1944, inclusive. *Further particulars will be found in the advertising columns.*

Ky., Carlisle.—Election is to be held June 21 to vote on \$15,000 school bonds. Address School Board.

Ky., Cadiz.—\$15,500 5½ per cent. 15-year Trigg county bonds have been purchased by Rudolph Kleybolte Co., Cincinnati.

Ky., Dixon.—\$5000 School Dist. high-school bonds are voted. Address Board of Trustees.

Ky., Mt. Vernon.—Bids will be received until noon July 1 for \$100,000 5 per cent. Rock Castle county road bonds. Address G. M. Ballard, County Judge.

La., Opelousas.—\$9000 Port Barre gravel road bonds are to be offered. Address Police Jury St. Landry parish.

La., Thibodaux.—All bids received for the \$105,000 5 per cent. 4-40-year Road Dist. No. 1, Lafourche parish, road bonds offered June 10 were rejected. Chas. J. Coulon is Clerk of Police Jury Lafourche parish.

Miss., Chilhowee.—Bids will soon be opened for \$6800 6 per cent. 5-20-year electric-light-plant bonds recently voted. M. J. Ream is City Clerk.

Miss., Gulfport.—Election is to be held July 6 to vote on municipal bonds. Geo. M. Foote is Mayor.

Miss., Jackson.—Bids will be received until 10 A. M. July 6 for \$65,000 5 per cent. 1-20 year \$1000 school bonds; dated May 1, 1915, and maturing May 1, 1935, inclusive. L. A. Scott is City Clerk.

Miss., Meridian.—\$50,000 5½ per cent. road bonds Dist. No. 1, Lauderdale county, recently reported sold, were purchased by G. W. McNear, Chicago, at a premium of \$1051.

Miss., Mendenhall.—Bids will be received until 8 P. M. July 6 for \$2600 6 per cent. 10-year school bonds. Address D. C. Hall, Clerk.

Miss., Meridian.—Ordinance has been introduced in the City Council authorizing an issue of \$40,000 city-jail bonds; also \$10,000 sewer and bridge bonds. Address The Mayor.

Miss., Philadelphia.—\$30,000 water and sewer bonds are voted. Address The Mayor.

Miss., West Point.—\$20,000 5½ per cent. 10-25-year road bonds Supervisors Dist. No. 2, Clay county, have been purchased by Hanchett Bond Co., Chicago, at \$211 premium.

Mo., Clayton.—\$10,000 5 per cent. fire-albumer bonds have been purchased by Altheimer & Rawlings Investment Co., St. Louis.

Mo., Kansas City.—\$790,000 of the \$4,560,000 improvement bonds recently voted will soon be put on the market. The bonds to be sold are as follows: Sewer, \$100,000; bridge and viaduct, \$200,000; police department, \$125,000; park, \$300,000; fire department, \$40,000; Chestnut Ave., \$25,000. Henry Y. Yost is Mayor.

Mo., St. Joseph.—\$325,000 4½ per cent. 19-20-year school district bonds have been purchased by the Mississippi Valley Trust Co. and the Mercantile Trust Co., St. Louis, at \$225,100 and interest. A. L. Loving is Secy.

N. C., Columbus.—\$10,000 Columbus High School Dist. bonds are voted. Address Board of Education.

N. C., Dobson.—Bids are being received by Dr. John Stone for \$30,000 30-year \$500 to \$1000 Dobson township, Surry county, road-improvement bonds voted June 8; interest not to exceed 6 per cent. J. B. Sparger is Chrmn. Board of County Commrs.

N. C., Dobson.—Bids are being received by Joseph H. Samuels, Mt. Airy, N. C., R. No. 1, for \$10,000 5 per cent. 30-year \$500 and \$1000 Long Hill township, Surry county, road-improvement bonds voted June 5. J. B. Sparger is Chrmn. County Commrs.

N. C., Durham.—Date for receiving bids for water-works bonds has been postponed indefinitely from June 16. B. S. Skinner is Mayor. (Previously noted.)

N. C., Gastonia.—Election is to be held June 22 to vote on \$100,000 school bonds. Address Board of Education.

N. C., Gastonia.—Election is to be held in Gaston county August 3 to vote on \$150,000 of bonds as follows: New roads and highways, \$50,000; repairing and extending roads and highways, \$50,000; liquidating and funding floating indebtedness, \$50,000. Address County Commrs.

N. C., Greenville.—\$30,000 school bonds are voted. J. B. James is Mayor and F. C. Harding is Chrmn. Board of School Trustees.

N. C., Henderson.—The election to vote on \$15,000 5 per cent. 20-year Kittrell Township, Vance county, \$1000 school bonds will be held about July 20. W. Edw. Rollins is Supt. Board of Education.

N. C., Jackson.—\$16,000 6 per cent. \$500 township road bonds were purchased May 18 by the Security Savings Bank & Trust Co., Toledo, O.; dated May 18, 1915; maturity 1931 to 1940. Address G. A. Moore, Secy.

N. C., Macon.—No satisfactory bids were received June 7 for the \$20,000 5 per cent. Nutbush township, Warren county, road bonds. P. M. Stallings is Chrmn. County Commrs.

N. C., Maxton.—\$20,000 Maxton Special School Dist. bonds are voted. H. C. MacNair is Secy. and Treas. Board of Education.

N. C., Maxton.—Dispatch to the Manufacturers Record says \$20,000 school bonds are voted. H. C. MacNair is Secy.-Treas. Maxton Special School Dist.

N. C., Mt. Airy.—Election is to be called to vote on \$7000 additional bonds to complete graded school building. E. C. Bivens is Mayor.

N. C., Salisbury.—Bids will be received until 10 A. M. July 15 for \$43,000 6 per cent. bonds Grant's Creek Drainage Dist., Rowan county. Address Board of Drainage Commissioners, P. H. Bernhardt, Chrmn.

N. C., Tarboro.—Bids will be received until noon July 6 for \$20,000 5 per cent. Edgecombe county bridge bonds. Address John A. Weddell, County Auditor.

N. C., Walnut Cove.—Election is to be held July 14 to vote on \$4000 6 per cent. 10-year bonds Walnut Cove Special School Tax Dist., Stokes county. J. G. Morefield is Clerk Board of County Commrs.

N. C., Waynesville.—Bids will be received until 3 P. M. July 25 by the Mayor and Board of Aldermen for \$6000 5 per cent. 30-year watershed bonds. Grover C. Davis is City Clerk. *Further particulars will be found in the advertising columns.*

Okla., Clinton.—Bids will be received until 8 P. M. June 17 for \$20,000 5 per cent. school bonds, dated May 20, 1915, and maturing May 20, 1935. P. G. Newkirk is Secy. Board of Education.

Okla., Marshall.—The \$25,000 electric-light and water bonds recently voted are 25-year 6 per cents, and will be offered for sale about July 10; denomination \$500. Address G. F. Ingle, Chrmn. Board of Trustees.

Okla., Madill.—\$38,000 O'Dell township, Marshall county, 6 per cent. \$1000 road-improvement bonds were voted June 9 and have been sold at par and accrued interest. Edwin Kirk is County Clerk.

Okla., Sapulpa.—\$150,000 school bonds were recently defeated and another election may be called this fall. Recent press reports stated the bonds had carried. John W. Young is Secy. School Board.

Okla., Stillwater.—\$12,000 5 per cent. school district building and equipment bonds have been purchased by the State Bank of Columbus.

S. C., Greenville.—Bids will be received until noon July 1 for \$400,000 5 per cent. Greenville county road bonds; dated July 1, 1915, and maturing July 1, 1940, to July 1, 1955, inclusive; denomination \$1000. Address W. H. Willmon, County Supr. *Further particulars will be found in the advertising columns.*

S. C., Newberry.—\$4000 6 per cent. 20-year Londs School Dist. 52, Newberry county, were recently purchased by Hanchett Bond Co., Chicago.

S. C., Orangeburg.—Bids will be received until July 30 for \$30,000 20-year bonds School Dist. No. 26, Orangeburg county; denomination to suit purchaser; interest not to exceed 6 per cent.; bids requested at 4½ and 5 per cent. A. W. Summers is Secy. and Treas. Board of Trustees.

S. C., Jefferson.—Jefferson township, Chesterfield county, has voted \$25,000 road bonds. Address County Commrs. at Chesterfield.

S. C., Sumter.—\$50,000 5 per cent. 20-year school bonds were voted June 8; dated July 1, 1915; maturity July 1, 1945. Bids for same will be received until noon July 10. D. M. Blanding is Secy. and Treas. School Board of Education.

S. C., Spartanburg.—\$13,000 4½ per cent. 20-year refunding bonds have been purchased at \$13,033.39 by George E. Gibson of Charleston.

Tenn., Bell Buckle.—Election is to be held July 10 to vote on \$25,000 6 per cent. 15-year water-works bonds. G. C. Bingham is Mayor.

Tenn., Chattanooga.—Bids will be received until 3 P. M. June 21 for \$165,000 4½ per cent. 30-year \$1000 funding-debt bonds; dated July 1, 1915. Jesse M. Littleton is Mayor.

Tenn., Elizabethton.—Election is to be held in Carter county July 5 to vote on \$360,000 road bonds. Address County Commrs.

Tenn., Henderson.—\$30,000 water-works, \$14,000 sewer and \$13,000 lighting bonds recently voted are 20-year 6 per cents. Jere I. Galbraith is Mayor.

Tenn., Jasper.—\$40,000 Marion county road bonds are voted. Address County Commrs.

Tenn., Maryville.—\$300,000 5 per cent. 10-35-year Blount county pike bonds recently voted have been declared illegal. Address Finance and Revenue Committee, R. P. McReynolds, Chrmn.

Tenn., Memphis.—\$350,000 5 per cent. school bonds have been purchased at par and accrued interest by the Bank of Commerce & Trust Co., Memphis, representing a syndicate.

Tenn., Nashville.—\$625,000 5 per cent. school bonds have been purchased by the National City Bank, New York, at \$650,585.

Tenn., Sweetwater.—Election to vote on \$5000 street and \$10,000 school bonds will be held July 22. W. T. Lenoir is Mayor.

Tenn., Tazewell.—\$372,000 30-year 5 per cent. Claiborne county road-improvement bonds have been purchased at par by the Mercantile Trust Co., Jackson, Tenn.

Tenn., Waverly.—Bids will be opened July 3 for \$250,000 5 per cent. 5-30-year Humphreys county highway bonds. Address Jas. T. Anderson, Chrmn. County Highway Com., Hurricane Mills, Tenn.

Tenn., Whiteville.—The election to vote on \$5000 school-improvement bonds will be held July 2. Address Board of Education.

Tex., Austin.—The Attorney-General has approved the following securities: Florence Hill Consolidated Common School Dist. No. 67, Dallas county, \$10,000 10-40-year 5 per cents; Parker County Common School Dist. No. 89, \$1500 10-20-year 5 per cents; Kendall County Road Dist. No. 1, \$25,000 20-40-year 5 per cents; \$3000 5 per cent. 10-40-year bonds Dallas Common School Dist. No. 27; \$10,000 5 per cent. 10-40-year bonds Harris county Common School Dist. No. 28; \$1500 5 per cent. 10-40-year bonds Joaquin Independent School Dist. No. 38.

Tex., Austin.—\$125,000 street, \$50,000 sewer, \$250,000 school 5 per cent. bonds are voted and are now offered for sale. A. P. Wooldridge is Mayor.

Tex., Beaumont.—The State Board of Education has purchased the following bonds: Carrollton Independent School Dist., \$12,500; Celina, \$25,000; Nevada, \$300; Rankin, \$15,000; Merkel, \$18,000; Joaquin, \$4000; Fairfield, \$3750; Bastrop County Common School Dist. No. 29, \$2500; Concho No. 26, \$2000; Bowie No. 12, \$10,000; Edwards No. 6, \$15,000; Newton No. 22, \$3000; Upshur No. 51, \$1200; Waxahachie City Public School Dist. No. 30, \$2500; Walker County Common School Dist. No. 9, \$2500; Florence Hill Consolidated No. 87, Dallas county, \$10,000; Parker County Common School Dist. No. 89, \$1500; Dallas County No. 67, \$3000; Harris County No. 28, \$10,000; Zavala County No. 4, \$4000; Joaquin Independent No. 38, \$1500; Bell county bridge repair, \$1800; city of Italy, sewers, \$17,000; city of Milford, street improvement, \$1000; city of Milford, street improvement, \$10,000; Guadalupe County Road Dist. No. 2, \$75,000; city of Palacios, roads, streets and bridges, \$4000; city of Shamrock, water-works, \$15,000.

Tex., Beville.—Election is to be held July 12 to vote on \$15,000 sewer-extension bonds. W. G. Gale is Clerk.

Tex., Boerne.—\$25,000 5 per cent. 20-40-year road bonds Road Dist. No. 1, Kendall county, are being offered for sale. Address J. W. Lawhorn, County Judge. *Further particulars will be found in the advertising columns.*

Tex., Celina.—\$25,000 Celina School Dist., Collin county, building and equipment bonds have been purchased by the Citizens' State Bank of Dallas.

Tex., Columbus.—\$9000 water-works bonds are voted. J. J. Mansfield is Judge Colorado county.

Tex., Donna.—\$750,000 Donna Irrigation Dist. bonds are reported defeated.

Tex., Fort Worth.—Elections are to be held June 30 to vote on \$7500 Haslet Dist. and \$2500 Avondale Dist. No. 90, Tarrant county, school bonds. Address County Commissioners.

Tex., Gonzales.—Election is to be held June 29 to vote on \$1500 bonds Common School Dist. No. 29, Gonzales county. Address County Commrs.

Tex., Goesbeck.—No bond election has been held recently. It was stated last February that an election would be held June 9 to vote on water-works bonds. A. H. Henderson is Mayor.

Tex., Orange.—Election is to be held July 20 to vote on \$325,000 wharf, dock and street bonds. Address The Mayor.

Tex., Port Lavaca.—Bids will be received at once by H. C. Innis, Mayor, for \$17,000 5 per cent. 10-40-year \$100 street-improvement bonds.

Tex., San Diego.—\$18,000 5 per cent. 1-40-year \$450 bonds Independent School Dist. No. 1, San Diego, Duval county, are offered. Address C. G. Mull, Chas. Hoffman and Manuel Rogers.

Tex., Sherman.—\$300,000 5 per cent. 40-year \$1000 road bonds were voted Apr. 17; dated May 10, 1915; date for opening bids not yet decided. Address Dayton B. Steed, County Judge.

Tex., Temple.—\$30,000 fire department bonds recently voted will soon be offered for sale. Address The Mayor.

Tex., Victoria.—\$100,000 5 per cent. 10-40-year fire-station, street-improvement and electric-light-plant bonds are to be issued. Address City Secy.

Tex., Victoria.—Election is to be held June 23 to vote on \$790,000 drainage district bonds. Address Commrs.' Court, Victoria county.

Tex., West.—Election is to be held early in July to vote on \$12,000 sewer bonds. Address The Mayor.

Tex., Wharton.—Election will soon be held in Wharton School Dist., Wharton county, to vote on high-school bonds. Address Board of Trustees.

Va., Covington.—Bids will be received until 10 A. M. June 26 by E. B. Butler, Mayor, for \$25,000 5 per cent. 20-year \$500 water-works bonds. *Further particulars will be found in the advertising columns.*

Va., Covington.—\$25,000 5 per cent. 20-year \$500 reservoir bonds are voted. E. B. Butler is Mayor.

W. Va., Charleston.—Districts in Kanawha county have voted road bonds as follows: Jefferson (St. Albans included), \$90,000; Loudon, \$85,000; Charleston, \$80,000; Union, \$50,000; Malden, \$45,000, and Poca, \$25,000. Address County Commrs.

Va., Dayton.—\$24,500 6 per cent. 10-20-year water, sewer and light bonds have been purchased by the People's Bank of Harrisonburg, Va.

W. Va., Pineville.—Election is to be held June 28 to vote on \$550,000 Wyoming county road-improvement bonds. Address County Commrs.

Va., Norton.—Election is to be held in Norton School Dist., Wise county, to vote on \$12,500 school-building bonds. Address Board of Trustees.

W. Va., Matewan.—Bids will be received until noon July 2 by J. S. Albert, Town Recorder, for \$12,000 6 per cent. 10-24-year \$500 bonds; dated July 1, 1915.

W. Va., Parkersburg.—Election to vote on \$47,000 5 per cent. 20-30-year Lubeck Dist., Wood county, road bonds will be held July 6. C. L. McVey is County Clerk.

W. Va., Spencer.—Bids will be received until 1 P. M. July 3 by H. C. Ferguson, Secy. Board of Education, for \$35,000 5 per cent. 10-30-year school bonds.

W. Va., Spencer.—\$100,000 Duval Dist., Roane county, road bonds are voted. Address County Commrs.

FINANCIAL NOTES

The North Carolina Bankers' Association is holding its annual convention this week at Wrightsville Beach near Wilmington, beginning June 17 and continuing until the 19th.

The Virginia Bankers' Association Convention begins June 17 and ends June 19 at Old Point Comfort. This is the twenty-second annual gathering of the Old Dominion financiers.

As reported to the State Bank examiner as of May 1, the total resources of 303 State banks and trust companies in South Carolina were \$66,797,890. Loans and discounts amounted to \$51,659,522. Individual deposits were \$34,072,069.

The total resources of 228 State banks and trust companies in Texas, as reported to the Department of Insurance and Banking at Austin at the close of business May 1, was \$134,034,598. Since the next previous statement on March 4 the loans and discounts increased \$2,135,885 in a total of \$72,732,861. Deposits are \$67,143,276.

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 We invite correspondence.

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The National Exchange Bank OF BALTIMORE, MD.

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**THE UNITED STATES COURT OF APPEALS OF THE
EIGHTH CIRCUIT**

sustained our contentions,

HELD THE PATENT TO BE VALID AND INFRINGED

and

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FOR SALE—A magnificent Southern home. Ideally located for winter home; all conveniences. Part cash; balance long term. Winter mild; no snow. Farmers' Land Loan & Title Co., 145 Pine St., Albany, Ga.

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PATENT YOUR IDEAS.—\$3000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent" sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F St., Washington, D. C.

C. L. PARKER, Patent Lawyer, formerly member Examining Corps, U. S. Patent Office, 224 G St., Washington, D. C. Patents secured. Patent suits conducted. Reports on the patentability of inventions, the scope and validity of patents, and whether any process or machine infringes existing patents. Reference to prominent manufacturers and pamphlet of instruction furnished upon request.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

INDUSTRIES WANTED

MISCELLANEOUS

WATER and railroad facilities can be had here. Labor is plentiful. The best of schools, churches and shipping facilities. We have an attractive proposition to new industries. If interested, write us. Pocomoke City Board of Trade, Pocomoke City, Md.

WANTED—Hub factory, canning factory, excelsior factory, brick plant, laundry; Little Red River developed for power. Address Chamber of Commerce, Heber Springs, Ark.

WEST POINT, VIRGINIA. OFFERS TO MANUFACTURERS natural advantages that will offset a big per cent. of bonuses offered by other cities not so well located. It will pay you to investigate before locating. Chamber of Commerce.

LOCATE YOUR PLANT IN MARION, NORTH CAROLINA. Complete railway facilities. Raw material. Cheap fuel. Good labor. Ideal climate. For further particulars address The Board of Trade, Marion, N. C.

FACTORY SITES

VALUABLE MANUFACTURING SITE, nine miles from Charlotte, N. C., with long frontage on two competitive railroads, electric power line, large stream of pure clear water through the land. Tract contains 141 acres. Will sell all or any part on reasonable terms. Want \$60,000, first mortgage, on two spinning mills, worth \$150,000. Interstate Improvement Co., Charlotte, N. C.

BALTIMORE FACTORY AND TERMINAL SITES.—Statement of Asa G. Candler, President The Coca-Cola Co.: "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements. Wm. Martien & Co., 3 N. Calvert St., Baltimore, Md.

INDUSTRIAL PLANTS FOR SALE

FURNITURE-INTERIOR TRIM PLANT.—For quick sale, the best factory in the South for manufacture of panel, furniture or interior trim. Special advantages in rates, taxes, labor, raw material, both yellow pine and hardwoods. Plant is new, fireproof, and insurance rate is 66 cents per \$100. Sale price is less than half the cost. Write for particulars and photographs. J. P. Mulherin, Trustee, Augusta, Ga.

FACTORY BUILDING

FOR SALE—A large factory building, 600 ft. long, 60 ft. wide; cement floors. Has been used as a leather enameling works. Building in excellent condition. Terms reasonable, or will take interest in any good prospect. Located at Yardley, Pa. Address Century Enameling Co., care Charles T. Eastburn, Yardley, Pa.

MODELS

MODELS MADE FOR INVENTORS.—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

MANTELS AND TILE FLOORS

NORTHCROSS WOOD MANTELS AND TILE FLOORS for every purpose. Sold direct from factory to your home. All orders receive prompt attention. Every contractor should have a copy of our new catalog showing the largest line in America. Mailed free. W. J. Northcross Mantel Company, 73 Union Ave., Memphis, Tennessee.

MEN WANTED

IF QUALIFIED for executive, technical, mechanical, professional or administrative position carrying salary between \$2500 and \$12,000, write undersigned counsel, through whom strictly confidential preliminaries will be negotiated for important appointments. Send address only for prefatory details. R. W. Bixby, E 1 Niagara Square, Buffalo, N. Y.

AGENTS.—Salary or commission. Greatest seller yet. Every user pen and ink buys on sight. 200 to 500 per cent. profit. One agent's sales \$630 in 6 days; another \$32 in 2 hours. Monroe Mfg. Co., X130, La Crosse, Wis.

ARE YOU LOOKING FOR A GOOD MAN? There are a number looking for you. You can get together through an advertisement in these columns. Try it. For rates and other information see block at head of department.

SALESMEN, slide line, well-established product, protecting boilers, coils, turbines, etc., from scale; not a boiler fluid. Address P. Bellows, 74-L Pearl St., Boston, Mass.

REPRESENTATIVES to cover territory more thoroughly. Boiler-room necessities; liberal commissions; old-established house. Apply by letter. H. F. Maurel, 534 West 22d St., New York City.

AGENCIES WANTED

EXPERIENCED BUSINESS MAN desires to represent manufacturer as selling agent under a contract giving him exclusive rights in New York city and vicinity, on a strictly commission basis. Address, giving full particulars, No. 1763, care Manufacturers Record, Balto., Md.

MANUFACTURER, do you want Washington, D. C. representative? Live, energetic sales office open to offer of any line used in building construction. Have large acquaintance among architects and contractors. Address No. 1778, care Manufacturers Record, Balto., Md.

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

SITUATIONS WANTED

CIVIL AND MECHANICAL ENGINEER with long experience in factory efficiency is open for position, preferably with machine or sheet-metal shop. Address No. 1771, care Manufacturers Record, Balto., Md.

MAN of high personal standing, experienced and capable in financial and specialty lines, a salesman and executive, qualified to earn \$5000 yearly and more, wants to hear from first-class concerns who want high-grade representation in Philadelphia; might consider other locations. Address No. 1777, care Manufacturers Record, Balto., Md.

COLLECTIONS

SEND your Illinois collections to Day Mercantile Agency, Peoria. No collection, no charge.

LETTERHEADS, PRINTING, ETC.

LITHOGRAPHED Letterheads: at low cost—5000, \$2 per M; 10,000, \$1.75 per M; 25,000, \$1.40 per M. Nominal engraving charge on 1st order; quality guaranteed. Write for samples on your own letterhead. Monarch Lithographing Co. (Dept. E), Minneapolis, Minn.

EMBOSSED LETTERHEADS, bond paper, 1000, \$3.75. Sample book free. Turner & Dunlap, Wilkes-Barre, Pa.

"ARISTOCRAT" fine business letterheads. Printed, 1000, \$2.50; 5000, \$3.75. Lithographed, 5000, \$10.00; 10,000, \$17.50. Sample portfolio free. L. S. Frank Adv. Mfg. Co., 725 Locust St., St. Louis.

DUPLICATING MACHINES

MULTIGRAPH, Duplicating and Printing Machines (slightly used), \$200; cost \$600. Smaller models cheaper. Universal folding machine (almost new) at one-half cost. All guaranteed. Will ship for trial. Russell Baum, Bourse Bldg., Philadelphia, Pa.

MACHINERY AND SUPPLIES

GRANULATED CORK

FOR SALE—50 tons pure granulated cork, cheap. Apply New Orleans Cold Storage & Warehouse Co., Ltd., New Orleans, La.

EXCAVATOR

FOR SALE—One second-hand excavator or dredging machine in good condition; has almost new 15 cu. ft. orange-peel bucket; can be successfully operated on wheels, skids or flatboat. Will sell cheap for cash, or will give terms to responsible parties. Call on or address B. H. Wilson, New Smyrna, Fla.

PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

PROPOSALS FOR STRUCTURAL STEEL and Accessory Parts for Shed on Pier No. 7. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 A. M. July 12, 1915, at which time they will be opened in public, for furnishing or furnishing and erecting the above-mentioned articles. Blanks and general information relating to this circular (No. 337) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La.; and Fort Mason, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala.; and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C. June 9, 1915. Sealed proposals will be opened in this office at 3 P. M. July 14, 1915, for the remodeling of the United States Courthouse (old Appraiser's Warehouse) at Galveston, Texas; also, for the remodeling of the United States Postoffice and Custom-house, Galveston, Texas. Drawings and specifications may be obtained from the Custodians of the Buildings, respectively, or at this office, in the discretion of the Supervising Architect. JAS. A. WETMORE, Acting Supervising Architect.

PROPOSALS FOR TWELVE ELECTRIC Towing Locomotives for Canal Locks. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 A. M. August 16, 1915, at which time they will be opened in public for furnishing the above-mentioned articles. Blanks and general information relating to this circular (No. 338) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La.; and Fort Mason, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala.; and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Office of Supervising Architect, Washington, D. C. June 4, 1915. Sealed proposals will be received at this office until 3 o'clock P. M. June 24, 1915, and then opened, for the inspection of structural steel and iron work for buildings erected under the control of the United States Treasury Department, from the date of the award of this contract to the end of the fiscal year, June 30, 1916, in accordance with specifications, copies of which may be obtained by applying to this office. JAS. A. WETMORE, Acting Supervising Architect.

PROPOSALS FOR GREENHEART LUMBER. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10:30 A. M. July 23, 1915, at which time they will be opened in public for furnishing the above-mentioned lumber. Blanks and general information relating to this circular (No. 340) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City, and 614 Whitney-Central Building, New Orleans, La.; also from the U. S. Engineer Offices in the following cities: Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala.; and Galveston, Tex.; Chamber of Commerce, Quincy, Ill.; F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C. June 2, 1915. Sealed proposals will be opened in this office at 3 P. M. July 14, 1915, for the construction, complete (including mechanical equipment except elevator), lighting fixtures, and approaches, of the United States postoffice and courthouse at Opelika, Ala. Three-story and basement building; ground area, 5900 square feet; fireproof, except roof; stone, ornamental terra-cotta, and brick facing; wood cornice and parapet; composition roof. Drawings and specifications may be obtained from the custodian of site at Opelika, Ala., or at this office, in the discretion of the Supervising Architect. 1915. JAS. A. WETMORE, Acting Supervising Architect.

FORT MYER, VA. Sealed proposals in triplicate for repairs to Hospital and Hospital Stewards' Quarters at Fort Myer, Va., will be received here until 11 A. M. June 28, 1915, and then opened. Information furnished on application. Envelopes containing proposals should be indorsed "Proposals for Repairs Hospital and Hospital Stewards' Quarters," and addressed, Quartermaster.

PROPOSALS FOR COAL. U. S. Engineer Office, Wilmington, N. C. Sealed proposals will be received here until 12 M. June 28, 1915, and then opened, for furnishing about 13,000 tons of bituminous coal. Further information of application.

\$25,000 Road Bonds

Road Bonds for sale, Kendall county, Texas. Road District No. 1 offers \$25,000 5 per cent. 40-year, optional 20 years, bonds. Bids solicited. No offer for less than par and accrued interest will be considered.

J. W. LAWHON,
County Judge, Kendall County,
Boerne, Texas.

\$6000 6% Bonds

Sealed bids will be received up to June 20, 1915, for the purchase of \$6000 6 per cent. school bonds. Interest payable semi-annually. Bonds to run 30 years. For full information address

J. F. ROGERS,
Secretary of Trustees.

(CONTINUED ON NEXT PAGE.)

PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

\$177,500 6% Bonds

Fort Myers, Fla.
For sale of bonds for Special Road and Bridge District No. 1 in Lee County, Florida. Notice is hereby given that the Board of County Commissioners of the County of Lee of the State of Florida will receive sealed bids at the Clerk's office, in the Courthouse at Fort Myers, Florida, until 2 o'clock P. M. on the 5th day of July, A. D. 1915, for the purchase of bonds of Special Road and Bridge District No. 1 in Lee County, Florida, authorized to be issued by the said Board of County Commissioners under the statutes in such case made and provided, and by special act of the Legislature of Florida of 1915 for the Special Road and Bridge District No. 1 in the sum of (\$177,500) one hundred seventy-seven thousand five hundred dollars.

The entire bond issue of (\$177,500) one hundred seventy-seven thousand and five hundred dollars, or any part thereof, is offered for sale, the same being in the denomination of (\$500) five hundred dollars each, being dated July 1, 1915, and maturing (30) thirty years after date, and bearing interest at the rate of (6) six per cent. per annum, with the usual interest coupons covering same attached thereto, interest payable semi-annually, and interest and principal payable at Fort Myers, Lee County, Florida, the said bonds redeemable serially on or after July 1, 1918.

The said Board of County Commissioners of Lee County, Florida, reserves the right to sell the whole or any part of said bond issue and to reject any and all bids. Each bidder is required to furnish a certified check, payable to the County Treasurer of Lee County, Florida, accompanying said bids, for two per cent. of the amount of his bid as evidence of good faith. The check of the successful bidder will be applied on purchase, or in case of his failure to comply with his agreement of purchase, then and in that event said check and the amount thereof shall be forfeited to the said County of Lee as liquidated damages, and said check shall be cashed and the amount thereof received by the County Treasurer immediately upon the acceptance of bid of successful bidder.

Each bidder will state the time when he will comply with his bid, and shall also specify whether the bid is in current money or in evidence of indebtedness against said County of Lee. Checks of all unsuccessful bidders will be returned to them.

This notice is given by order of the Board of County Commissioners of Lee County, Florida, and dated the 8th day of June, A. D. 1915.

H. A. HENDRY,
Clerk of said Board and of
Lee County, Florida.

\$35,000 School Bonds

Chapel Hill, N. C.
Sealed bids will be received by N. W. Walker, Secretary of the Board of Trustees of the Chapel Hill Graded School District, up to the hour of noon June 30, 1915, for the purchase of Thirty-five Thousand Dollars (\$35,000) of School Bonds; denomination \$1000. Bonds to run 30 years; interest payable semi-annually, July 1 and January 1. Bids invited at 5, 5½ and 6 per cent. interest. No bid for less than par accepted. Low rate of interest preferred to higher premium. Purchaser to furnish blank bonds. The Board reserves the right to reject any and all bids.

\$25,000 5% School Bonds

The Mayor and Board of Commissioners of the town of Mount Airy, Surry county, North Carolina, will receive sealed bids until one o'clock P. M. the 23d day of June, 1915, for \$25,000 of 30-year 5 per cent. school bonds in \$1000 denomination. Dated August 1, 1915, and due 30 years thereafter. Interest payable semi-annually on the first day of August and February of each year. No bids will be accepted for less than par value. The right to reject any and all bids is hereby reserved. Each bid must be accompanied by a certified check for one thousand dollars.

E. C. BIVENS,
Mayor of the Town of Mount Airy.
June 2, 1915.

\$40,000 5% Bonds

Hammond, La., June 2, 1915.
Sealed bids will be received by T. R. Thames, Commissioner of Finance, Hammond, Louisiana, until 2 o'clock P. M. Saturday, June 26, 1915, for \$40,000 sewerage bonds.

Bonds to be in denominations of \$500 and to bear interest at the rate of 5 per cent. per annum, payable semi-annually.

Each bid must be accompanied by a certified check for \$400. The Commission reserves the right to reject any and all bids.

For full information address

T. R. THAMES,
Commissioner of Finance.

\$16,000 5½% Bonds

Morehead City, N. C.
Morehead City, N. C. Invites bids for the purchase of \$16,000 5½ per cent. semi-annual refunding 30-year bonds. Bids will be opened Tuesday, July 6, 1915, at 9 o'clock P. M. The town reserves the right to reject any and all bids.

Financial statement of town furnished on application.

M. L. WILLIS,
Secretary-Treasurer.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

\$155,000 5% Bonds

Ocala, Fla.

The Board of Bond Trustees of the City of Ocala, Florida, will, on the twenty-sixth day of June, A. D. 1915, at 3 o'clock P. M., at the office of R. S. Hall, in Ocala, Marion county, Florida, sell to the highest and best bidder the following bonds of said city:

\$55,000 worth of water-works Bonds of said city, of the denomination of \$1000 each, bearing five per cent. interest, payable semi-annually, all of said bonds maturing August 1, A. D. 1933. Interest and principal payable at the office of the City Treasurer of the City of Ocala.

\$100,000 worth of Sewerage Bonds of said city, of the denomination of \$1000 each, bearing five per cent. interest, payable semi-annually, \$33,000 of said bonds maturing January 1, 1925, \$33,000 of said bonds maturing January 1, 1935, and \$34,000 of said bonds maturing January 1, 1945. The principal and interest of said bonds being payable at the office of the City Treasurer of said city.

Bids may be submitted at any time before sale; should be directed to Ernest J. Crook, Secretary of Board of Bond Trustees, Ocala, Florida; all bids must be sealed and accompanied by a certified check of five per cent. of the bid as evidence of good faith, to be returned if bid not accepted.

The said Board hereby reserves the right to reject any and all bids.

R. S. HALL,
Chairman of Board of Bond Trustees
of the City of Ocala.
Attest:
E. J. CROOK,
Secretary of the Board of Bond
Trustees of the City of Ocala.

\$400,000 5% Bonds

Greenville, S. C.

Sealed bids, at not less than par and accrued interest, will be received by the undersigned until noon July 1, 1915, when they will be opened, for the purchase of four hundred thousand (\$400,000) dollars Greenville county road bonds, to be dated July 1, 1915, and to mature as follows: Twenty-five thousand (\$25,000) dollars on July 1, 1940, and twenty-five thousand (\$25,000) dollars on July 1 of each year thereafter until and including July 1, 1955, without option of prior payments; bonds to be in the denomination of one thousand (\$1000) dollars each and to bear interest at not exceeding five (5%) per cent. per annum, payable semi-annually, both principal and interest payable at some responsible bank in the City of New York. The approving opinion of Storey, Thorndike, Palmer & Dodge of Boston as to the legality of said bonds will be furnished. Each bidder must deposit a certified check for two (2%) per cent. of the amount of bid, with no conditions endorsed on same, except the legality and regularity of said issue, drawn on some bank in the City of Greenville, S. C., and payable to the order of W. H. Willimon, County Supervisor, as a guarantee that the purchaser will take up and pay for the bonds as soon as same are signed and ready for delivery; and in case the purchaser should fail to pay for said bonds within ten (10) days after they are ready for delivery, the required deposit will be forfeited to the county. The right is reserved to reject any or all bids.

W. H. WILLIMON,
County Supervisor.
J. W. NORWOOD,
Chairman Greenville Highway Commission.
June 10, 1915.

\$30,000 5% Bonds

The undersigned will receive sealed bids to noon July 15, 1915, in the City of Toccoa, Stephens county, Georgia, for \$30,000 par value "Electric Light Bonds." City of Toccoa. City offers thirty bonds of \$1000 denomination each, interest coupons attached, interest at 5 per cent., payable annually on January 1, beginning January 1, 1917, reserving for the present the first five maturing bonds, the bonds now offered maturing as follows: \$1000 on January 1, 1923; \$1000 on January 1 each year thereafter for 13 years, up to and including January 1, 1936, and \$2000 each year thereafter for 8 years, up to and including January 1, 1944, when the last of said bonds mature. Bonds are to be executed and delivered by September 1, 1915, and money received at that time, though bonds are dated January 1, 1916, and

interest begins on January 1, 1916. Certified check of \$500 must accompany each bid. Council reserves the right to reject any and all bids.

H. J. COX, City Clerk,
Toccoa, Ga.

\$25,000 5% Bonds

Covington, Va.

Sealed bids will be received by the Mayor and Town Council of Covington, Va., until 10 o'clock A. M. June 26, 1915, for the purchase of \$25,000 twenty-year water-works bonds. Interest 5 per cent., payable semi-annually. Denomination \$500.

Address all bids to E. B. Butler, Mayor. For further information apply to J. D. Mustoe, Town Treasurer.

\$6000 5% Bonds

The Mayor and Board of Aldermen of the Town of Waynesville, North Carolina, will receive bids until 3 P. M. July 25, 1915, for 30-year watershed bonds. Interest payable semi-annually. Each bid must be accompanied by a certified check for \$300. Board reserves the right to reject any and all bids.

GROVER C. DAVIS,
City Clerk for the Town of
Waynesville, N. C.

Highway

Frederick, Md.

Sealed proposals, addressed to the County Commissioners of Frederick County, and endorsed "Proposals for building a section of State-aid highway in Frederick County," through the town of Brunswick and upon or along the Brunswick-Petersville Road between the B. & O. Depot in Brunswick and the State Road at or near Petersville, for a distance of about 1.94 miles in the town of Brunswick, and 1.53 miles from the Brunswick Corporation line to the State Road at or near Petersville. Contractors will bid for each section of aforesaid road separately, that is, for that part in the town of Brunswick in one bid, and that part from the corporation line of Brunswick to the State Road at or near Petersville in another and separate bid; and said bids will be received by the County Commissioners of Frederick County at their office, Frederick, Md., until 12 o'clock noon of the 3d day of July, 1915, and at that time and place will be publicly opened and read.

All bids must be made upon blank forms to be obtained of the State Roads Commission at its office, 601 Garrett Building, Baltimore, Md., must give the prices proposed both in writing and in figures, and must be signed by the bidder, with his address.

Each must be accompanied by a certified check for two hundred dollars (\$200), payable to the County Commissioners of Frederick County, said check to be returned to the bidder unless he fails to execute the contract should it be awarded to him.

Plans can be seen and forms of specification and contract may be obtained on cash payment of one dollar (\$1) at the office of the State Roads Commission, Baltimore, Md.

The Commissioners of Frederick County reserve the right to reject any and all proposals.

By order of County Commissioners.
JOHN W. HOLTER, Pres.
H. L. GAVER, Clerk.

Brick Roadway

Clearwater, Fla.

Sealed bids will be received by the Board of County Commissioners of Pinellas County, Florida, at their meeting at the Courthouse, June 18, 1915, to be opened at 2 P. M. in Clearwater, Florida, for the building of fifty miles, more or less, of brick roadway, nine feet wide, backed by three feet on each side of shell or rock. Plans, specifications and bid sheets can be seen on June 15 in the office of the Clerk of the Circuit Court at Clearwater, Florida. Bids will be considered in sections or as a whole, and all bids must be accompanied by a certified check of 5 per cent. of the total amount of bid. All bids will be subject to funds becoming available by vote of the electors on bonds or warrants ordered to be held July 3, 1915.

Board reserves the right to reject any or all bids.

C. W. WIECKING,
Clerk Board of County Commissioners,
Pinellas County, Florida.

Proposal for Extending Sewers and for a Sewage-Disposal Plant

Winston-Salem, N. C.

Sealed proposals will be received by the Committee on Sewers of the Board of Aldermen of Winston-Salem, N. C., until 4 o'clock P. M. June 30, 1915, for building a Sewage-Disposal Plant, Reinforced Concrete, and for extending main sewer lines thereto a distance of 2½ miles, of 24 and 30-inch pipe sewers in shallow trench. The right is reserved to reject any or all bids.

Plans, profiles, etc., may be seen at the office of the Engineer, or plans of the Disposal Plant can be obtained upon payment of \$3.

For specifications, forms of proposals, etc., address the Engineer, J. L. Ludlow, Winston-Salem, N. C.

L. F. OWEN,
Chairman Committee on Sewers.

Sewers

Madisonville, Ky.

Proposals will be received at the office of the Board of Public Works until 3 P. M. July 1, 1915, for the construction of 8666 feet of sanitary sewers in the city of Madisonville, Ky., in accordance with the plans and specifications as prepared by J. M. Flanagan.

BOARD OF PUBLIC WORKS,
By W. J. Duin, Sec.

Reservoir, Water-Works Materials, Etc.

Covington, Va.

Sealed proposals will be received by the Mayor and Town Council of Covington, Virginia, until one o'clock P. M. on Monday, July 12, 1915, for furnishing cast-iron pipe, specials, valves, and other water-works materials, and for furnishing materials and constructing a two-million-gallon concrete-lined two-compartment reservoir.

Plans and specifications may be seen at the Town Clerk's office, Covington, Va., or at the office of Harry Stevens, Consulting Engineer, Union Trust Building, Washington, D. C., or will be forwarded by the Engineer upon request. The right is reserved to reject any or all bids.

E. B. BUTLER, Mayor.
HARRY STEVENS, Engineer.

Motor Street Sweepers

Roanoke, Va.

Sealed bids will be received by P. H. Tucker, City Clerk, Roanoke, Va., until noon Tuesday, June 29, on Motor Street-Sweeping Machines.

F. L. GIBBONEY,
City Engineer.

Rock-Crushing Outfit

Notice is hereby given that the Board of County Commissioners of Hernando County, Florida, will on or before noon on June 26, 1915, receive sealed bids for the purchase of one rock-crushing outfit. The Board reserves the right to reject any or all bids.

M. H. SNOW, Clerk,
Board of County Commissioners,
Brooksville, Fla.

Reinforced Concrete Buildings

New Orleans, La.

Sealed proposals will be received by the Board of Commissioners of the Port of New Orleans at their office, Suite 200 New Orleans Court Building, until July 21, 1915, at 2 o'clock P. M., and then publicly opened, for the construction of reinforced concrete buildings for the Cotton Warehouse and Terminal, including the two-story wharf-house, about 120 feet by 200 feet; warehouse "E," about 150 feet by 550 feet, with their attached runways and appurtenances, located on the Mississippi River near Valence street in New Orleans.

A deposit of \$25,000 in cash or certified check is required with proposal. Bond of \$300,000 required with contract.

Payments monthly to the extent of 90 per cent. of the Engineers' estimate of work accomplished, including allowance for a reasonable stock of material.

On and after June 10, 1915, plans and specifications will be on file at the office of Ford, Bacon & Davis, No. 921 Canal street, New Orleans, La., by whom full sets will be furnished to prospective bidders on deposit of \$100, which will be refunded to depositors who submit proposals and return sets in good condition. To depositors who do not submit proposals \$50 will be refunded on return of the set in good condition.

The right is reserved to reject any and all bids and to waive informalities.

(Signed) ERNEST M. LOER,
President.

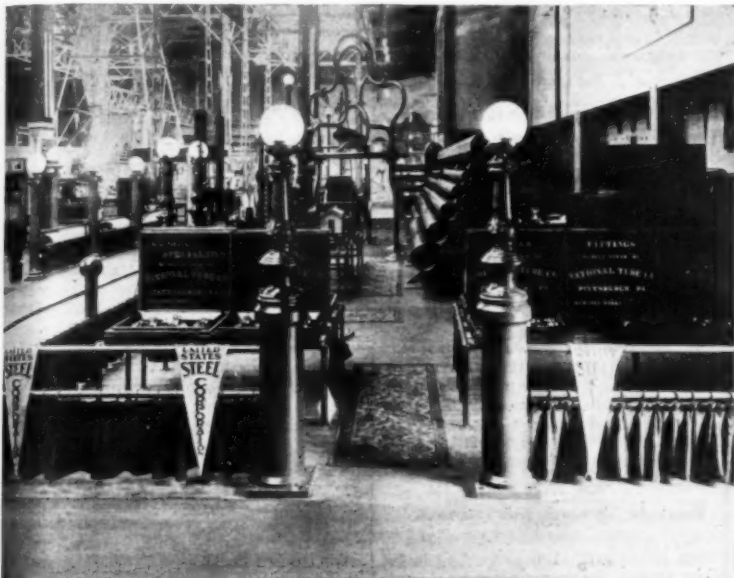
INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

United States Steel Corporation's Extensive Exhibit.

The exhibit of the United States Steel Corporation, located in the Palace of Mines and Metallurgy, occupies 45,000 square feet of floor space and covers practically all the activities and products of the entire Corporation. It is believed that this is the most comprehensively educational display that has ever been prepared to show the manufacture and use of iron and steel products. More

water-supply boat "Aquadon," belonging to the Boston Provision & Ship Supply Co., New York; a 330-horse-power 4-cylinder engine on barge No. 62 for the Standard Oil Co., New York; a 50-horse-power 2-cylinder stationary oil engine to run electrical equipment of the U. S. Navy tankship "Maumee," now being completed at the Mare Island Navy-yard, San Francisco; a 75-horse-power 2-cylinder stationary oil engine direct connected to two 60-cycle alternators in the



U. S. Steel Corporation's booth at the Panama-Pacific Exposition, showing a section of the National Tube Co.'s exhibit.

than a year was spent in planning and preparing the exhibit, for which it was necessary to design and manufacture thousands of individual features. Certain intricate models required months of tedious work; large mechanical devices necessitated weeks of patternmaking, foundry work, machining and finishing, while the motion pictures, which are a feature of the exhibit, kept a crew of experts busy all last summer, with the final result that practically every important step in the manufacture of steel products, from the mining of the iron ore to the finishing of the completed material in the steel mills, is shown, either actually or in motion pictures. One of the subsidiary companies, the National Tube Co. of Pittsburgh, has a particularly interesting display. It is composed of a working exhibit designed by the Research Department of the National Tube Co. for the carrying on of the comparative corrosion tests; a 2x3x2-foot model of an emergency hospital erected at one of the works of the company, which shows in detail the method of construction, an exhibit of "Shelby" seamless tubing, showing the various operations in the manufacture of this product, and a large model of a two-inch octagon "Kewanee" union which stands six feet high.

New Schooner to Be Oil Driven.

"Gilbert Island," the new schooner now being completed in Hendry's Yard at Liverpool, Nova Scotia, was recently purchased by Tly Sang & Co., Sydney, Australia, through T. H. Franklin, ship and freight broker, New York, is to be put in service between China and Australia. This ship will be equipped with an 80-horse-power two-cylinder direct reversible Bolinders marine oil engine, made by the Bolinders Co., 30 Church St., New York, also a 5-horse-power oil engine of the same make for hoisting purposes, and in addition one of the lifeboats will be equipped with a 5-horse-power Bolinders oil engine. Other recent Bolinders installations include a 50-horse-power 2-cylinder direct reversible engine for a cotton-carrying barge to ply between Macon and Brunswick, Ga., for the Macon-Atlantic Navigation Co. of Macon; a 100-horse-power 4-cylinder reversible marine engine for the

power station of the Borough of Butler, N. J., and many more in the United States, Cuba and South America.

New Address Boston Office.

Sullivan Machinery Co., manufacturer of mining and quarrying machinery, People's Gas Bldg., Chicago, reports the removal of its Boston offices from 35 Federal St. to 135 Devonshire St., Room 1010, Unity Bldg.

Southern Representatives Barber Asphalt Paving Co.

The Barber Asphalt Paving Co., Philadelphia, announces the change of headquarters of H. M. Sinnott, one of its Southern representatives, from Birmingham, Ala., to Jacksonville, Fla. Mr. Sinnott represents the street and road department of the company, and covers Southern Georgia, Alabama and Florida. The headquarters of F. M. Whitfield remains at Atlanta, Ga.

Mill Supply Co. Organized.

The General Mill Supply Co., Charlotte, N. C., has been formed with M. C. Thompson as president, for the purpose of handling, on a commission basis, mill supplies for the Southern cotton mills and large manufacturing plants in the Carolinas, Georgia and Virginia. Mr. Thompson reports his company would like to communicate with concerns furnishing such materials and also manufacturers of Rock Maple flooring.

Dickerson Fans.

Dickerson all-steel anti-vacuum boll breaker and cotton cleaner, manufactured by the Dickerson Cotton Cleaner Co. of Fort Worth, Tex., was especially designed to handle bolley cotton—that is, cotton picked with bolls and cotton together. The fan has a perforated nozzle on the intake, which is constructed in such a manner as to extract all cotton from the bolls before the bolls are taken through the fan and placed on the boll breaker. This feature is claimed to enable the gin man to get a good grade of staple out of the half-open frost-bitten bolls, as they are broken up and the cotton is extracted and not mixed with any foreign matter during the ginning. Also, construction of the fan is said to en-

able the sawmill and planing-mill people to use it for the purpose of handling blocks and sawdust in transit from the workroom to the furnace, as the blast wheel is protected from any blocks or sticks. The fan is reported to be used extensively in the handling of cottonseed, as the seed does not come in contact with any part of the blast wheel.

Cotton Mills Install Private Telephone Systems.

N. L. Walker, manufacturers' representative, Raleigh, N. C., advises that the Proximity Cotton Mills and Revolution Mills at Greensboro, N. C., and the Lockhart Mills, Lockhart, S. C., are installing private telephone apparatus of the Couch autophone system, manufactured by the S. H. Couch Co., Inc., Norfolk Downs, Mass. In addition to being the Southern representative of the Couch Company, Mr. Walker also represents the line of electric motors and generators made by the Crocker-Wheeler Co., Ampere, N. J.

George W. Duvall & Co., Inc.

Several weeks ago the Manufacturers Record announced the consolidation of the Norfolk Foundry, Ridgwell & Hall, proprietors, with George W. Duvall & Co., Inc., 900-1004 Water St., Norfolk, Va. Officers of the George W. Duvall Company are James A. Ridgwell, president; William H. Ridgwell, vice-president, and Arthur J. Hall, secretary and treasurer. This corporation will continue to do general steamboat building and repairing, and will carry on machinery, boiler-making, iron and brass work, patternmaking, etc., in addition to the manufacture of Duvall's patent tube ferrule.

Awards School Building Contract.

General contract, amounting to \$67,965, for the erection of a 12-room fireproof school building at Chillicothe, O., has been awarded by the Chillicothe Board of Education to Ritter & Bates, architects, Portsmouth, O. The building will be of concrete construction, with a brick and terra-cotta exterior. Contracts on heating and ventilating, also plumbing and gasfitting, will be awarded at a future date, the low bids and the certified checks attached thereto being retained by the Board until final action regarding this award is taken.

Morse, Hall & Cockey.

Robert B. Morse, Harry R. Hall and Vinton B. Cockey, formerly of Morse & Cockey, have organized as consulting engineers under the firm name of Morse, Hall & Cockey, with offices located at 324 N. Charles St., Baltimore. Mr. Morse is at present chief engineer of the Maryland State Department of Health, and Mr. Hall is his principal assistant. Mr. Cockey was formerly assistant chief engineer of the Roland Park Co. The new firm will make a specialty of water supply and sewerage engineering, typhoid fever investigations, landscape development, roads and paving.

Secures Large Machinery Contract.

Contract for the machinery to be installed in the molasses feed plant of the McGowin-Bennett Mercantile Co., Georgiana, Ala., has

been awarded to the Gruendler Patent Crusher & Pulverizer Co., 924-928 N. 1st St., St. Louis. A new two-story mill is under construction, and in it will be placed the engine, power-transmission machinery, conveying equipment, mixers and pulverizers, all furnished and installed by the Gruendler Company. The pulverizers and mixers are to be of the standard type manufactured by the Gruendler Company, but the conveying machinery will be of special design.

Removes General Offices.

General offices of the Carter Construction Co. have been removed from New York to the Railway Exchange Bldg., St. Louis, in order to facilitate handling the contract, amounting to approximately \$3,000,000, recently secured by the company for the building of the Mill Creek sewer at St. Louis. The company specializes in railroad construction, one of its notable contracts being the 86 miles of road built for the Western Maryland Railroad from Connellsville to Cumberland. G. H. Carter is president of the company; C. B. Head, assistant to president; A. W. Jones, vice-president and general manager, and S. F. Cohen, secretary.

Cold Water Cement Paint.

American Cement Paint Co., successor to the Chickamauga Cement Co., Rossville, Ga., announces that its company is now manufacturing a cement cold-water paint which is reprocessed from white or gray Portland cement. This paint, which is sold under the trade name of "Zemco," is said to possess all the hardening and lasting qualities of the cement from which it is made, and it is particularly suited for coating brick, concrete, plastered surfaces, stucco, etc., and metals. A full line of cold-water paints or calcimines manufactured under the old methods are still being marketed by the company under the trade name of "Factrolite."

Holt's Stockton (Cal.) Plant.

In the last issue of "The Caterpillar Times," published by the Holt Manufacturing Co., Inc., Stockton, Cal., is given a full description and history of the development of the company's factory at Stockton. Many illustrations showing various departments where the parts of the "Caterpillar" tractors and harvesters are made and assembled are contained in this number. Another new piece of advertising literature, issued by the Holt company, is a catalogue on the Caterpillar "45," which contains many illustrations of this tractor in actual operation in different parts of the country. A detailed description of its construction, together with a survey of its characteristics and uses, are also given in the catalogue.

Atlantic Power & Properties Co.

The charter of the Atlantic Stone Co., which owns extensive stone quarries and river rights on Broad River, in Elbert county, Georgia, has been amended, changing the name to Atlantic Power & Properties Co. and increasing the capital from \$30,000 to \$60,000, all paid in. Further increase of capital to an amount not exceeding in the aggregate \$1,000,000 is permitted



A general view of Carborundum products, manufactured by The Carborundum Co., Niagara Falls, N. Y., which are on display in the Palace of Machinery at the Panama-Pacific International Exposition, San Francisco. This exhibit was described in detail in the Manufacturers Record last March.

under the amended charter. The scope of the company is considerably widened so as to include not only the operation of granite quarries, but the development of hydro-electric projects and similar enterprises. The same officers remain in charge, namely, W. G. Watson, president; Wm. Hurd Hillier, treasurer. The executive offices are at 835-7 Trust Company of Georgia Bldg., Atlanta.

"Tarvia" Reinforced Roads.

Advent of the automobile and more recently the heavy motor truck has necessitated the development of methods and materials for the protection and strengthening of macadam roads. Well known among such materials is "Tarvia," a plastic bituminous binder produced by the Barrett Manufacturing Co., New York. Many of the old macadam roads do not require rebuilding, and processes have been developed for applying the "Tarvia" to the old surface in such a way as to preserve them from the ravages of modern traffic. In building new roads or rebuilding the old, "Tarvia" binders are used which are claimed to be so strong that the stones are held in place despite the efforts of heavy traffic to dislodge them.

Miami Ocean Front Developments.

Among the ocean-front developments at Miami, Fla., are those of the Miami Beach Improvement Co. This company has sold 300 acres of its 1600 acres, planted about 200 for an avocado pear orchard, cleared 100 for farming and set aside 110 for golf links. South of the company's land is the Alton Beach development, 400 acres, of Carl G. Fisher of Indianapolis. Farther south is the 600 acres, Ocean Beach, of the Ocean Beach Realty Co. All this land excepting about half of the Miami Beach property is in the corporate limits of Miami Beach. During the past two years it is estimated that more than \$1,500,000 have been invested for bulkheading, dredging from the bay, raising the land along the bay front, constructing streets and sidewalks, etc., besides building about 50 dwellings costing from \$3000 to \$50,000 each.

Metal Bending and Shaping Press.

A new power press or brake has been designed by Bertsch & Co., Cambridge City, Ind., for a general class of bending and punching operations connected with the manufacture of fireproof construction for making steel doors, windows, partitions and trim; also, all kinds of metal furniture, lockers and shelving, cornice, skylight and track work for trolley systems, gang punching, etc. Each part of the device is said to have been carefully figured for the correct stress and strain with a liberal factor of safety giving ample capacity for bending a quarter-inch plate. Bearings, shafts and gears are of generous proportions, and the main drive is through a friction clutch controlled by an automatic friction brake, which allows for instant stoppage of the slide head at any point in the stroke. Either hand or power adjustment is provided for the head. The presses are built in standard sizes from 6 feet to 12 feet for various capacities up to 100 tons in weight.

Use of Silica-Graphite Paint.

A practice that is said to be fast gaining adoption in progressive power plants is the use of paint for the inner surface of steam boiler drums, as the paint is claimed to afford protection against pitting. Silica-graphite paint, manufactured by the Joseph Dixon Crucible Co., Jersey City, N. J., is used for this purpose, and for a number of years the maker of this paint has coated the steam drums of five B. & W. boilers developing 1800 horse-power, and as a result the drums are reported in almost perfect condition. Another instance, in a plant equipped with B. & W. boilers developing 8400 horse-power, the interiors of the drums were scalded, painted both above and below the water line, and allowed 48 hours to thoroughly dry. In commenting on the results of this work the company writes: "This treatment was repeated every ten months, and not only did it stop pitting, but where it had previously taken six men seven days to clean the drums of one boiler, two men now clean them in a day."

Increasing Sand and Gravel Output.

The Davison Chemical Co., Garrett Bldg., Baltimore, is now putting on the market a fine quality of sand and gravel for concreting purposes which are being produced from the large sand and gravel deposit located on the company's property at Curtis Bay, adjacent to the city of Baltimore. While the Davison Chemical Co., which is said to be probably the largest manufacturer in the country of sulphuric and other acids, began the develop-

ment of this deposit a little over a year ago, the successful growth of this department is attributed not alone to the advantages secured through its geographical location, but to the high quality of the material. Among the trade and users of sand and gravel it will be valued from the fact that it is taken from a large deposit above tidewater by steam shovels and at once passed through a series of screens, where it is thoroughly washed. Owing to the irregular formation and well-graded sizes, the gravel produced from this deposit is claimed to be especially valuable for use in concrete work of all kinds. This plant, which was illustrated and described in the Manufacturers Record several weeks ago, is located on the Patapsco River, from which point shipments in barges, scows or vessels can be made. It is in easy reach of the various railroads entering Baltimore, allowing also for unsurpassed transportation facilities by rail. In addition to the washing and screening machinery, and the handling apparatus installed, the transportation problem is well taken care of by the company's own fleet of deck scows, tugboats, etc., which puts under its control the necessary equipment for conveying the output and enabling the company to make all possible water deliveries.

TRADE LITERATURE

Bauer Oil Mill Machinery.

Complete hulling and separating and other "Scientific" cottonseed oil mill machinery, manufactured by the Bauer Bros. Co., Springfield, O., are illustrated and described in Catalogue No. 75 issued by the company. In this catalogue is found a detailed description, with illustrations, of disc hullers, double shakers, hull-beating separators, seed cleaners, hot and cold cake mills, and other oil mill machinery.

"Genuine" Open Hearth Iron Products.

Culverts, tanks, silos, troughs, wagon tanks, etc., made of open-hearth iron are described and illustrated in a folder issued by the Newport Culvert Co., Inc., Newport, Ky. The corrugated metal culverts made by this company are said to contain 15 per cent. of copper, which adds materially to the rust-resisting qualities of the pure iron used. Illustrations of culvert work in McDowell county, North Carolina; Henderson county, North Carolina, and other places in the South are shown in the folder.

The Alexander Road Law.

Special reprints of the Arkansas road act, known as "The Alexander Road Law," are being distributed by Speer & Dow, Investment brokers, Gazette Bldg., Little Rock, throughout the State of Arkansas and to other persons interested in road-building enterprises. This act, which was approved March 30, 1915, provides for the creation and establishment of road improvement districts for the purpose of building, constructing and maintaining the highways of the State of Arkansas.

"Burnover" Gas Heaters.

A patented enamel gas heater, known as the "Burnover" heater, which is manufactured by the Burnover Heater Co., a subsidiary of the Chattanooga Stamping & Enameling Co., Chattanooga, Tenn., is illustrated and described in pamphlets issued by the company. The heater is constructed on the return gas principle, requires no flue, and in operation is said to burn the gas over and over, producing an automatic heating action that leaves no fumes or odors. Higher the gas is turned, it is claimed, the more rapid the circulation of the hot through the furnace, and consequently the more heat developed.

General Electric Bulletins.

Latest General Electric publications, issued by the General Electric Co., Schenectady, N. Y., include Bulletin No. 4446 on ventilated commutating-pole railway motors; Bulletin No. 41013, on direct-current commutating-pole RC type motors; Bulletin No. 48303 describes hand-operated starting rheostats and panels for direct-current motors ranging in capacity from one-eighth to 550 horse-power, and are designed for use on 115, 230 and 550-volt direct-current circuits, and Bulletin No. 42352, entitled "Motor Generator Sets," is an attractive publication of 28 pages containing numerous illustrations of various types of motor-generator sets designed and manufactured by the company. By the adoption of the box type of frame and a specially effective system of ventilation, and by the use of pressed steel for certain parts, the ventilated commutating-pole railway motor, known as GE-247, is claimed to be made sufficiently

light in weight for use on light cars in street service without sacrificing the strength or reliability found in larger and heavier motors. Type RC motors are built with a frame of cast steel of medium weight. They can be used with a sliding base, which maintains a correct driving alignment, and which, with the adjustable shields, permit the installation of the motor on either the floor, wall or ceiling. The RC motors are wound for 115, 230 and 550-volt direct-current circuits, with permissible voltage range of from 110 to 125, 220 to 250, and 500 to 600 volts.

Southern Highway Construction.

June number of "The Highway Magazine," issued by the association of manufacturers who make corrugated culverts from "Armco" iron, manufactured by the American Rolling Mill Co., Middletown, O., contains several illustrated articles on road construction work in the South. Reconstruction of the old Revolutionary trail, now known as "The Boone Way," which runs through Crab Orchard and Mt. Vernon, Ky., in Rockcastle county; through Laurel, Knox and Bell counties on to the Kentucky-Virginia-Tennessee line, is described, together with a synopsis of the road-building program for Kentucky in 1915. "A System of Roads for Florida" is the subject of another article in this number dealing with Southern road work.

Pneumatic Concreting Equipment.

Among many bulletins issued by the Pneumatic Placing Co., Inc., manufacturer and designer of pneumatic conveying equipment, 45 Broadway, New York, describing its apparatus and methods for various concreting operations, the following are of especial interest: Form No. 10 contains illustrations and description of the "Pneumatic" method in conveying and placing concrete in tunnels of small bore; Form No. 11, the use of the "Pneumatic" method in conveying and placing concrete in double-track railroad tunnels; Form No. 12, the "Pneumatic" method in conveying and placing concrete in retaining walls, abutments and other types of heavy concrete work, and Form No. 13 illustrates and describes the "Pneumatic" method in conveying and placing concrete for viaducts and piers.

Summer Resorts and Hotels.

Springs, seashore and mountain resorts of Virginia are illustrated and described in the "Resort Book" recently published by the passenger traffic department of the Norfolk & Western Railway, Roanoke, Va. The booklet is issued for the purpose of putting before the prospective traveler information and points of interest where pleasure, comforts and health can be had. A perusal of the book will convince those that the country traversed by the Norfolk & Western Railway abounds in historical, scenic and other attractions. The train service between the North and South via the Norfolk & Western Railway is said to be particularly advantageous for travelers to the resorts of this section. Through sleeping and dining cars are operated between New York, Philadelphia, Baltimore, Washington, New Orleans, Meridian, Birmingham, Knoxville, Chattanooga, Nashville and Memphis.

Fargo Electric and Mechanical Devices.

Complete revised publications now being issued by the Fargo Manufacturing Co., Inc., Poughkeepsie, N. Y., describing its line of "Superior" wiring and mechanical devices, include catalogue and price-list No. 700, catalogue and price-list No. 800 and bulletin No. 402. Catalogue No. 700, on "A" and "B" type of "Superior" mechanical devices, illustrates the wide variety of the latest designs in mechanical connections made by the company, and in addition to the standard designs shown, special orders will be furnished from drawings. Catalogue No. 800, on Fargo's "Superior" wiring devices, types "A" and "B," contains a full description of the electrical connections made by the company, and

bulletin No. 402, an addition to catalogue No. 800, illustrates and describes Fargo's straight type, bus bar, terminal and tee and all connections, insulated cases, cable lugs, grounding devices, etc.

Forcing Presses.

Hydraulic forcing and miscellaneous presses manufactured by the Watson-Stillman Co., 53 Church St., New York, are described and illustrated in sectional catalogue No. 82, which supersedes catalogue No. 70 and part of No. 82 issued by the company. Among the products represented in this catalogue are: Hand-powered hydraulic wheel presses; motor and belt-driven plain wheel presses; motor and belt-driven full and semi-pneumatic wheel presses; crankpin presses; armature presses, for binding the laminations of motor armature; branching presses, for forcing branches through castings to cut and shape holes that cannot be machined by mill, drill or other mechanical means; reversed cylinder presses, for miscellaneous forcing work; halving presses, and many others. The line of hydraulic tools manufactured by the company is so general and the illustrations of the various machines so numerous it has been found convenient to divide the tools into classes, making each class the substance of a catalogue. A list of these classified catalogues, any of which will be mailed upon application, is given in the back of catalogue No. 82.

Testing V-Notch Meters.

Cochrane engineering leaflet No. 18, issued by the Harrison Safety Boiler Works, 17th below Allegheny Ave., Philadelphia, contains a reprint of two important papers on the "Testing of V-Notch Meters" as used in the Cochrane metering header. The earlier paper, by James Barr, describes at considerable length and detail the apparatus used by him and the results obtained in tests conducted at Glasgow University in 1907-1909, by which he established the fact that with a V-notch weir the true discharge for given conditions could be determined within one-third of 1 per cent. The later paper, by W. S. Giele, describes a commercial testing apparatus of large capacity installed by the Harrison Safety Boiler Works for the purpose of carrying out an extensive series of tests upon V-notch weirs of different dimensions as actually installed in commercial meter chambers manufactured by them. Both papers are interesting as illustrating on the one hand the many refinements which are essential in the precise investigation of problems in hydraulics, and on the other the admirable constancy of the V-notch weir when used under known and predetermined conditions.

Gas and Gasoline Engines and Oil-Driven Compressors.

Bulletins No. 34-X and 34-U, relating, respectively, to Class "A-G" "Giant" gas and gasoline engines and "Chicago Pneumatic" Class "N-SO" fuel oil driven compressors, manufactured by the Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, and 52 Vanderbilt Ave., New York, have recently been issued by the company. Six sizes of Class "A-G" gas and gasoline engines, ranging from 16 to 130 horse-power, are illustrated and described in bulletin 34-X. The engines are similar in design to the well-known "Giant" fuel oil driven engines manufactured by the same company, with the exception that they are designed for operation with manufactured or natural gas. Their enclosed self-oiling features, simplicity and automatic regulation make them desirable throughout the field where manufactured or natural gas is available for power purposes. Bulletin 34-U contains complete instructions for erecting and operating "Chicago Pneumatic" Class N-SO fuel oil driven compressors. Copies of the bulletins and other information may be obtained by applying to the company's branch offices located in many of the principal cities of the country.

FOR SALE

Completely equipped and modern Foundry and Machine Shop and Plating Plant, large lot of Turret Lathes, etc., adapted for manufacture of Shrapnel, etc. Immediate possession. Lot about 400 ft. x 400 ft. Address IDEAL BRASS MFG. CO. POTTSTOWN, PA.

THOS. J. McDONALD

Forest Engineer

Timber Estimating, Timber Mapping and Logging Plans, etc.

East Tenn. Bank Bldg. KNOXVILLE, TENN.

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AND AGRICULTURAL AND MECHANICAL COLLEGE

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Thirteen degree courses in Agriculture Engineering and Applied Science. Two-year course in Agriculture and Farmers Winter Courses.

Apply to Registrar for Catalogue.

J. D. EGGLESTON, President.

Special Advertisements of General Interest.

ICE PLANT FOR SALE

For Sale—A 55-ton Ice Plant in one of the larger towns in Texas, running, selling all ice in summer; good business; will give possession any time. Lot 250 ft.; 100 trackage; 1 deep wells; one 35-ton upright "Frick"; one 20-ton "Wolf"; 3 boilers; all pumps in duplicate; three 4-room houses close.

Address D. B.

Care Manufacturers Record, Baltimore Md.

Merchants Looking for Better Location
with all conditions in their favor, should write me about new EARLE BUILDING, Birmingham, Ala.—five stories and basement, strictly modern, full fireproof construction, in heart of city, and one hundred feet from best improved corner in the South.

R. A. TERRELL

503 Title Guarantee Bldg. Birmingham, Ala.

Patent For Sale

A Cutlery Cleaner. Will sell for 10c. retail—and empty market. Write for circular.

J. HELSTROM, SEA BRIGHT, N. J.

GOOD OPENING FOR MAN WITH MONEY

Company engaged in the manufacture of brick and hollow ware desires to increase capacity of plant. Herefore plant has produced the cheaper grades of brick only. An increased capital will make possible the manufacture of the better grades, for which there is a market in nearby territory. Company will give first mortgage on property valued at \$125,000, or, if preferred, will give bonds or stock for the money and make party furnishing money active officer in company. An excellent proposition for the right person. For details REFER TO FILE M-6223.

ADDITIONAL CAPITAL WANTED

A modern equipped machine and woodworking plant, located in progressive North Carolina city, with three railways, desires additional capital. This concern does general machine, boiler and engine work, and in addition manufactures an attractive line of step-ladders, lawn swings, etc. Company owns property well located in business section of city. More money required to extend business.

REFER TO FILE M-6211.

For details write F. H. LA BAUME, Agr'l and Ind'l Agt., Norfolk & Western Railway Co., Roanoke, Virginia.

AUCTION SALE of Property and Plant of "Union Cotton Bagging Corporation"

Pursuant to a decree duly entered in the United States District Court for the Eastern District of Virginia, at Norfolk, on the 12th day of May, 1915, in the suit of Eugene Holt and others, plaintiffs, vs. Union Cotton Bagging Corporation and others, defendants, in chancery, the undersigned will expose for sale at public auction in the City of Norfolk, Virginia, the hereinafter described property, on the premises, on Saturday, the 26th day of June, 1915, at 12 o'clock M.:

First—All those twenty-one (21) lots, pieces or parcels of land, situated in the Ninth Ward of the City of Norfolk, Virginia, known, numbered and designated on the plat of "Villa Heights," duly recorded in the Norfolk County Clerk's Office in Map Book No. 4, at pages 22 and 23, as lots one (1) to twenty-one (21), inclusive of both numbers, in Block one (1), being the whole of said block. The said block is more particularly bounded and described as follows:

Beginning at the southeastern intersection of Church and 24th streets, and running south two hundred and thirty-three and three-tenths (233.3) feet; thence easterly two hundred and seventy (270) feet, more or less, to Fawn street; thence northerly along Fawn street one hundred and ninety-one and six-tenths (191.6) feet, more or less, to 24th street; thence westerly along the south line of 24th street two hundred and seventy-one and eight-tenths (271.8) feet, more or less, to the point of beginning.

Second—All those twenty-four (24) certain lots, pieces or parcels of land, situated in the Ninth Ward of the City of Norfolk, Virginia, known, numbered and designated on the plat of "Villa Heights," duly recorded in the Norfolk County Clerk's Office in Map Book No. 4, pages 22 and 23, as lots one (1) to twenty-four (24), inclusive of both numbers, in Block two (2), being all of said Block two (2). The said block is more particularly bounded and described as follows:

Beginning at the northeast corner of 24th street and Church street, and running thence easterly along the northern side of 24th street two hundred and forty-eight (248) feet, more or less, to Fawn street; thence northerly along the western side of Fawn street two hundred and fifty (250) feet, more or less, to 25th street; thence westerly along the south side of 25th street two hundred and sixty-three (263) feet, more or less, to the east side of Church street; thence southerly along the eastern side of Church street two hundred and fifty and two-tenths (250.2) feet to 24th street, the point of beginning.

Third—All those four (4) certain lots, pieces or parcels of land, situated in the Ninth Ward of the City of Norfolk, State of Virginia, known, numbered and designated on the plat of "Villa Heights," duly recorded in the Norfolk County Clerk's Office in Map Book No. 4, pages 22 and 23, as lots one (1), two (2), thirteen (13) and fourteen (14), in Block eight (8), the said lots taken as a whole are bounded and described as follows:

Beginning at the southeastern corner of 24th street and Fawn street, and running thence southerly along the eastern side of Fawn street one hundred and eighty-one and three-tenths (181.3) feet; thence easterly fifty and twenty-eight-hundredths (50.28) feet; thence northerly one hundred and sixty-four and eight-tenths (164.8) feet to the southern side of 24th street; thence westerly fifty (50) feet to the eastern side of Fawn street, the point of beginning.

Together with all the buildings, improvements, manufacturing plants, rights, privileges, easements and appurtenances situated on or belonging to any of the above-mentioned real property, or in any wise appertaining thereto.

There shall pass with all of the above-described land all the buildings, improvements, manufacturing plants, rights, privileges, easements and appurtenances situated on or belonging to any of the above-mentioned real property, or in any wise appertaining thereto, excepting that the following machinery described in the fourth paragraph or subdivision hereof shall not be included therein.

Fourth—The following machinery located on the above-described premises:

MACHINERY.

- | | |
|-----------------------------------|-----------------------------|
| 10 Garnetts (James Hunter). | 3 Ragging Rolling Machines. |
| 12 Union Special Sewing Machines. | 1 45 H. P. Motor. |
| 2 Pickers. | 1 35 H. P. Motor. |
| 2 Screw Presses. | 1 25 H. P. Motor. |
| 1 Hydraulic Press. | 1 10 H. P. Motor. |
| 2 Willows. | 1 5 H. P. Motor. |
| 1 Mixing Picker. | 1 2 H. P. Motor. |
| 1 Mixing Lumper. | |

Tank, International Sprinkler System.
The land and buildings described in the first three paragraphs or subdivisions hereof shall first be offered for sale together as a whole, then the machinery mentioned and described in the fourth subdivision or paragraph hereof shall be offered as a whole, and then the said land and buildings together with said machinery shall be offered together as a whole, and the highest price offered or obtained therefor shall be the one reported by the undersigned.

The above sale shall be upon the terms of one-fourth cash and the residue in three equal installments, payable, respectively, in one, two and three years from date of sale, the credit installments to be evidenced by promissory notes or bonds of the purchaser or purchasers, with interest from their date at six per centum per annum, payable semi-annually, and said promissory notes or bonds to be secured by deed or deeds of trust upon the land and property so sold.

Said sales will be subject to the approval of the Court.

HARRY K. WOLCOTT,
THOMAS H. WILLCOX,
Special Commissioners, Norfolk, Va.

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In New England territory would like to represent reliable concern in iron or machinery line, straight commission basis. Prompt attention to all inquiries. Have storage facilities—salesmen on road—equipped with business autos. Write for information. Address

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Something to Manufacture

I have a machine shop and foundry located in center of coal, iron and lumber districts, well equipped, well organized from manufacturing to selling end. Responsibility all right. I want one or two perfected mechanical articles to manufacture and sell. Send cuts and full information.

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Personal Representatives in Brazil and the Argentine Republic.

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FOR SALE AT PUBLIC AUCTION

June 26, 1915, at CHARLES TOWN, W. VA.

A Modern Brick-Making Plant, consisting of about 15½ acres of land, brick-making machinery (Freeze), dry-house, five permanent kilns, etc.

The plant is located in Ranson, a suburb of Charles Town, Jefferson County, West Virginia, and is connected with B. & O. and N. & W. Railroads by belt line and switch.

For terms, photographs and further description of plant, address

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Charles Town, Jefferson County, W. Va.

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400 KW. Direct Current Unit Generator FOR SALE

400 KW., type E, Fort Wayne, 125 R.P.M., 10 pole, compound wound, 250 or 550 volts, direct connected to

ENGINE

Russell tandem compound, 20" and 35"x27"; also switchboard panel for this unit, including necessary switches, Circuit Breakers, Equalizing Switch and Field Rheostat. This unit is practically new, having been operated only a few weeks. Price \$3500 f. o. b. Sandusky, Ohio.

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FOR SALE—240 KVA Alternating Current Direct Connected Unit, Immediate Delivery

240 KVA, type ATB, form E, class 36, 3-phase, 60-cycle, 240 or 480-volt revolving field type General Electric engine type alternating-current generator, direct connected to 17½x21 heavy-duty type piston-valve horizontal Buckeye automatic

ENGINE

fully equipped with 11 K. W., 125-volt, 1200 R. P. M. compound-wound General Electric belt-driven exciter, Slate Enamel switchboard panels, with all instruments. Perfect operative condition. Now located in the National Electric Lamp Works of the General Electric Company, Cleveland, Ohio. Price \$3750. Excellent outfit for any manufacturing concern using alternating current.

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1914-1918 Scranton Road Electrical Dept. CLEVELAND, OHIO

PUMPS AND COMPRESSOR FOR SALE

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| 1 J. L. Swelgard Compressor, size 14"x15"x9½"x14"..... | \$350.00 |
| 1 Worthington Pump, size 16x8½x10..... | 125.00 |
| 1 Blake Pump, size 12x5x12..... | 100.00 |
| 1 Gardner Pump, size 10x4x10..... | 75.00 |

These Pumps and Compressor are in good condition and ready for immediate delivery.

The Piedmont Iron & Metal Company
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Large 25-Cycle Alternating Current Unit

FOR SALE

1500 K. W. type ATB revolving field 3-phase 25 cycle 13,200 volts or any voltage desired 94 R. P. M. General Electric Alternating Current Generator, direct connected to 30x56x60 Rice & Sargent 2250 H. P. cross compound Corliss engine, fully equipped with exciter, condensing equipment, piping, etc. In A-1 operative condition. Available immediate shipment. WILL SELL SEPARATE ENGINE FROM GENERATOR.

National Machinery & Wrecking Co.

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Electrical Dept. CLEVELAND, OHIO

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|--|---------|
| 6 7½ H. P. 220-v. D. C. Wagner, each..... | \$78.50 |
| 4 15 H. P. 500-v. D. C. Kentucky..... | 150.00 |
| 1 25 H. P. 220-v. 3-ph. 60-cy. 1200 Fairbanks..... | 200.00 |
| 1 60 K. W. 250-v. 600 Commercial..... | 470.00 |

All machines complete. Write for stock list.
PAN ELECTRIC MFG. CO.
ST. LOUIS, MO.

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FOR SALE

A 62½ K. W. Allis-Chalmers Generator, 240 volts, 290 amperes, direct connected with an Erie City slide-valve 100 H. P. engine, in first-class order and condition. For further information address

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50 or 60 H. P. Oil Engine

We are in the market for 50 or 60 H. P. Engine, burning gasoline or kerosene, second-hand, but first-class condition. State age, condition and price.

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Special Bargains in Sanders

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| 1 42" 3-drum Perfection Sander, thoroughly overhauled..... | \$350.00 |
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| 1 48" 4-drum H. B. Smith Sander..... | \$500.00 |
| 1 48" 3-drum Royal Invincible Sander, used only 3 weeks..... | \$550.00 |
| 1 54" 3-drum J. A. Fay & Co., fine order..... | \$500.00 |
| 1 60" 3-drum Columbia Sander in A-1 condition..... | \$600.00 |

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| 1 20" Carrey and Joints..... | \$100.00 |
| 1 30" Russ Extra Heavy Hand Joints..... | \$125.00 |

Woodworking machinery of all kinds. Write, stating your requirements.

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| 1 100 K. W. 125-250-volt Sprague Generator, D. C. to 10 and 20x16 Ball & Wood Tandem Semi-Corliss Four-valve Engine. Boilers, Gas Engines, Motors. Tell us what you want. |
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FOR SALE

On account of changes in our power plant, we will sell the following engines:
One cross-compound condensing Corliss Engine, 18x34x48, rated at 425 H. P., built by Watts-Campbell Co. in 1905.
One cross-compound condensing Corliss Engine, 24x44x48, rated at 725 H. P., built by Watts-Campbell Co. in 1907.
These engines are in good condition and may be inspected while in regular service.

Forstmann & Huffmann Co.
PASSAIC, N. J.

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- 1 42" Band Resaw.
- 1 30x7 Whitney Double Surfer.
- 2 16" Jointers.
- 1 30x7 Whitney Single Panel Planer.
- 1 8" Joints.
- 1 Berlin 48" Triple Drum Sander.
- 50 24" 80-lb. I Beams, lengths to 39'.
- 95 20" 65-lb. I Beams, 19' to 20'.
- 65 15" 60-lb. I Beams, 18' to 20'.
- 165 15" 60-lb. I Beams, 16' to 22'.
- 200 10½" 35-lb. I Beams, 14' to 22'.
- 150 tons 12" 35-lb. Sheet Piling.

Write for Free Complete List No. XB-213.

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CHICAGO HOUSE WRECKING CO.
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| 400 H. P. G. E. Induction Motor, 720 R. P. M., 2200 volts, complete..... | \$2000.00 |
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| 35 H. P. Westinghouse, 2-phase, 1140 R. P. M., complete..... | 200.00 |
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Large stock of smaller motors and dynamos, both A. C. and D. C. Let us have your requirements.

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Cross Compound Corliss Engines

FOR SALE

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| 2—20x38x48 500 H. P. 80 R. P. M. Hamilton. |
| 1—14x26x42 350 H. P. 85 R. P. M. Hamilton. |

Above have rope drive wheels. Are in first-class condition.
Price \$25 per net ton.

National Machinery & Wrecking Co.

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As to the location and leading to the purchase of

Good Second-Hand Electric Motors

V. M. NUSSBAUM & CO., Ft. Wayne, Ind.

Complete Machine Shop Equipment

- Lathes: 14x6 Lodge & Shipley, patent head; 21x10 Lodge & Davis; 18x10 Lodge & Davis; 18x8 Bradford; 27x12 J. B. Reed; 27x8 Turning Lathe without screw-cutting; Jones & Lamson Flat Turret Lathe. Yankee Stile. A drill grinder. 3½" Modern Sellers Radial Drill. Shapers: 20" Cincinnati; 24" American. Planers: 24x6 Lodge & Davis; 24x6 Powell; 42x36x8 Pond. Greenfield Universal Grinder. No. 3 Brinard Plain Milling Machine. 20" Lodge & Davis Drill Press, sliding head, back gears, power feed. 13" Higley Cold Saw. Davis Keyseater. Baker 4-spindle Back Geared Power Feed Heavy Duty Gang Drill. 30" Henley Pulley Lathe. 36" Streit Pulley Boring Machine.

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10,000 feet 22" Riveted Steel Dredge Pipe (first-class condition, practically good as new) at 50c. per foot f. o. b. cars, for immediate shipment.

2 1,000,000-gallon D'Auria Pumps (can now be seen working).

1 Ingersoll-Sargeant Straight Line Air Compressor, 22x22½x24.

1 Ingersoll-Sargeant Straight Line Air Compressor, 16x16½x18.

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A. C. UNITS 3 PHASE 60 CYCLES

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| K. W. Make. | Volts. | Rev. | Engine. |
| 2 90 Westge. | 440-220 | 257 | Westge Gas Engine. |
| 125 Westge. | 240 | 3600 | Parsons Tur. (Steam). |
| 190 G. E. | 440 | 180 | Westge. Gas Engine. |
| 2 300 G. E. | 550-440 | 225 | Harrisburg 4 Valve. |
| 400 G. E. | 2300 | 120 | Mel. & S. Vert. C. G. |
| 2 400 G. E. | 2300 | 150 | 18 & 36x30 Buckeye. |
| 600 Westge. | 440 | 90 | 32x48 Allis Corliss. |
| 750 G. E. | 440 | 90 | 26 & 50x48 Corliss C. G. |

1000 G. E. Any 1800 H. F. West. St. Turb.

2 1000 Westge. Any 1800 H. F. West. St. Turb.

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419 Pine St.—OTHER SIZES—St. Louis.

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FOR SALE

One Fairbanks-Morse 40 H. P., type N, Oil Engine; practically new. Burns gasoline, coal oil or low grade distillate. Address

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Modern First-Class Machinery a Specialty

Every piece rebuilt and guaranteed; prompt deliveries.

CORLISS ENGINES

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| 16"x32"x36" Hamilton Cross Compound, 500 H. P., extra heavy. |
| 18"x48" Greene. |
| 16"x30" Allis, 150 H. P. |
| 16"x30" Watts-Campbell L. H., 150 H. P. |
| 16"x30" Wetherill R. H., 150 H. P. |
| 12"x36" Greene R. H., 110 H. P. |
| 12"x30" Greene R. H., 100 H. P. |

Automatic and Slide-Valve Engines, Vertical and Horizontal, all sizes.

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| Steam 20", water 12", stroke 12", "Snow," outside packed. |
| Steam 16", water 9", stroke 24", "Barr," outside end packed. |
| Steam 12", water 8", stroke 10", "Advance," and many others. |

HEATERS

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| 3000 H. P. Goubert, heavy pressure. |
| 1500 H. P. Webster. |
| 1000 H. P. Berryman Gleaner. |
| 500 H. P., 300 H. P., 200 H. P., 100 H. P. Cochran and many others. |

AIR COMPRESSORS

All sizes—Steam and Belt Driven

ICE MACHINE

15-ton Ice; 30-ton Refrigerating; Penna. Iron Works; Corliss driven.

Large assortment of Machine Tools. If you are in want of tools of any kind, let me know, and I would be pleased to mail you detailed specifications and best price. Send for complete catalogue. Correspondence solicited.

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Refrigerating Machine

7-ton York, steam-driven, Refrigerating Machine.

Compressor and engine on same bed plate.

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The Assets Purchasing Company
WHEELING, W. VA.

FOR SALE

80-ton Refrigerating Machine PRACTICALLY NEW

1-80-ton Wolf-Linde Refrigerating Machine—compressor 15½" bore by 30" stroke; direct connected to Filer & Stowell Rolling Mill Type Corliss Engine, 16" bore by 42" stroke. This outfit is complete in detail and in first-class operating condition, having been in service eighteen months only. Can be seen in operation. Will sell at a sacrifice to quick buyer.

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- 2' Fosdick Plain
- 3' Universal Drill Co. Plain
- 3' Prentice Plain
- 3½' Niles Plain
- 4' Niles Universal
- 4' Fosdick Plain
- 4' Prentice Plain
- 5' Niles Plain
- 5' Fosdick Plain
- 5' Bickford Plain
- 6' Bickford Plain
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OTHER DRILLS

- 23" Prentice Bros. B.G. P.F. S.H. Combination Drill & Slotter
- 2 spindle rim Drill Press
- 7 spindle Woodward & Rogers Sensitive Drill
- 2-6 spindle Woodward & Rogers Sensitive Drills
- 24" Gould & Eberhardt Drill B.G. P.F. S.H.
- 2-4 spindle Dwight-Slate Sensitive Drill
- 3 spindle Dwight-Slate Sensitive Drill
- 2 Norton & Jones 3 spindle Sensitive Drill
- 2 spindle Foote & Burt Drill
- Bement-Miles Wall Drill Press
- 40" Mitchell Upright Drill Press

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IN EXCELLENT CONDITION

FOR SALE

Direct Current Generating Sets, 250 and 550 volts.
Boilers, 150 H. P., Return Tubular.
Feed Water Heaters—Cochrane, Stillwell-Bierce and McGowan.
Horizontal and Vertical Steam Engines, 5 to 320 H. P.
Air Compressors—Laidlaw-Dunn-Gordon and Norwalk, capacities 900 cu. ft. to 2100 cu. ft.
Separators, Steam Traps and Piping.
Steam Pumps, Piston and Plunger, best makes.
Mining Equipment. Full list furnished on request.

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Used Machine Tools

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- No. 142-18"x10" Lodge & Shipley Motor-Driven Patent Head.
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- No. 1306-14"x16" Towley 4-step Cone Speed.

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- No. 28-16"x6" Lodge & Shipley 3-step Cone.
- No. 111-22"x7" Lodge & Shipley 3-step Cone, Friction Head.
- No. 122-Two 24"x10" Lodge & Shipley 3-step Cone, Friction Head.
- No. 166-18"x6" Lodge & Shipley Turret.
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- A-30"x30"x10" Detrick & Harvey Open Side.
- B-36"x36"x12" Niles.
- No. 248-30"x30"x10" Gray.
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- No. 238-16" Queen City Back Geared.
- No. D 223-26" Smith & Mills Shifting Belt.

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- No. 650-No. 11 Landis Plain Grinder.
- No. 668-No. 8 Landis Plain Grinder.
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- No. 696-Rivett Grinder equipped with Head Internal Head.
- No. 703-No. 1 LeBlond Universal Cutter and Tool Grinder.

MISCELLANEOUS

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- No. 347-Burke Hand Miller.
- No. 432-Gardam Multiple (four-spindle) Drill.
- No. 432-3-spindle Henry & Wright Sensitive Drill.
- No. 523-Fay 28" Wood Planer.
- No. 690-Marion Buffing Stand for two wheels.
- No. 1607-Bowscher 12"x38" Balancing Ways.
- No. 3005-Ingersoll-Sargent Drill Co. 8"x8" Belt-Driven Double-Acting Air Compressor.
- No. 1690-2"x8" Rockford Straightening Machine.
- No. 1236-Sturtevant Blower. Diameter of outlet, 3½".
- No. 2531-Sturtevant Blower. Diameter of outlet, 2½".
- No. 1326-Two 2" Cleveland Automatic Turret Machines.
- No. 1340-1" Cleveland Automatic Turret Machine.
- No. 1329-2½" Hartford Automatic Screw Machine.
- No. 683-Mueller Grindstone Frame for 4"x27" stone.
- No. C-Diamond Emery Wheel Stand (for two wheels).
- No. D-West Haven Hack Saw (for 6" stock).
- No. E-Pawling & Harnischfeger Horizontal Boring Machine with Baush 6-spindle attachment.
- No. 1363-12"x40" Mumford Molding Machine.
- No. 1379-Universal Swivel Table for Radial Drill.
- No. D 1356-Diamond Combination Grinding and Polishing Stand.
- No. 1401-Gleason Mitre Gear Tester.
- No. 661-Globe Tool Sharpener for ¼"x8" wheels.
- No. D 1355-Centering Machine, chuck capacity 2".
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CINCINNATI, OHIO

FOR SALE

Train of two 21" Roughing Mills.
650 H. P. Wetherill Rolling Mill Engine.
600 H. P. Buckeye Horizontal Twin Steam Engine.
Four Root Patent Foundry Blowers 5½"(A).
Five Chicago Pneumatic Tool Company Air Hoists.

W. L. BIRTWELL
Crozer Building PHILADELPHIA

THERE IS A REASON

why our properly rebuilt Machinery gives satisfaction

ASK US

ENGINES, CORLISS: 18x43 Hamilton; 16x42 Brown; 16x43 Hamilton; 14x43 Hamilton; 14x36 Nagle; 13x20 Hamilton; 10x24 Hamilton.

ENGINES, AUTOMATIC: 21x23 Ridgway; 19x13 Ball; 14x14 Erie; 10x16x12 Buffalo Compound; 13x13 Ball; 13x14 Green; 13½x12 Armstrong & Sims; 10x15 Buckeye; 8x14 Noyes; 8x10 McEwen; 6x8 Harrisburg.

ENGINES, THROTTLING: 30x24 H. S. & G.; 16x18 Ames; 14x14 Lewis, vertical; 13x16 Erie; 12x14 Gibbs; 11x16 H. S. & G.; 10x16 Lane & Bodley; 10x12 new Handle; 8x12 Erie; 8x10 Brownell; 7x10 Union; 6x8 Industrial, vertical; 6x8 Industrial; 3x4 Kriebel.

BOILERS, STATIONARY: HIGH PRESSURE: 1 300 H. P. for 125 lbs.; 3 150 H. P. for 125 lbs.; 1 125 H. P. for 125 lbs.; 3 100 H. P. for 110 lbs.

BOILERS, STANDARD: From 150 to 20 H. P. for 100 lbs.

BOILERS, LOCOMOTIVE FIRE BOX: From 150 to 10 H. P., high and low pressure.

BOILERS, VERTICAL: 60 to 4 H. P., plain and submerged tubular.

GENERATORS AND MOTORS: Belted and direct connected.

MISCELLANEOUS: Heaters, open and closed; pumps, all sizes; sawmills; corn mills and feed grinders; exhaust fans and blowers; woodworking machinery; iron-working tools; leather, rubber and canvas stitched belts; pipe, valves and engine and boiler fittings.

Sole manufacturers of the "Leader" Injector and Ejector. Ask for circular.

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Used Machine Tools

IF INTERESTED IN

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DRILLS
PLANERS
SHAPERS
GRINDERS

Write us for descriptions with photographs.

Prentiss Tool & Supply Co.
NEW YORK

NEW STOCK LIST

We have just received from the printers our new Stock List, which covers our entire line of power equipment, steam and electric; contractor's outfits, motors and generators, pumps, heaters, air compressors, machine tools, woodworking machinery, etc.

If you are not on our mailing list send for a copy, it is well worth looking over. We are now dismantling several machine shops, which contain a good assortment of fine machines. A special list of these will be mailed on request.

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- 50"x16" Pittsburgh Machine Tool Co. Heavy Lathe.
- 50"x27" New Haven Lathe.
- 33"x55"x12" Extension Bed Gap Lathe.
- 30"x16" Pond Lathe.
- 30"x12" New York Safety Lathe.
- 25 smaller Lathes in stock.
- 48"x48"x15" Sellers Planer.
- 48"x48"x36" Sellers Planer, blocked out to 54".
- 30"x30"x12" Standard Planer.
- 30"x30"x9" Whitcomb Planer.
- Large stock of smaller Planers.
- 36"x12" Hess Heavy Duty Slat Milling Machine.
- No. 4 Williams-White Bulldozer.
- No. 5 Stiles Power Press.
- 3500-lb. Bement-Miles Double-Frame Steam Hammer.
- Brown & Sharpe No. 3 Gear Cutter.
- Whitton Hand-Feed Gear Cutter.
- 30" Double-End Sellers Punch and Shear, weight about 35,000 lbs.
- 350-lb. Bement-Miles Single-Frame Steam Hammer.
- 16" B. G. American Shaper.
- 16" Stockbridge Shaper with centers.
- 60" Bement Horizontal Boring Mill.
- 48" Bement Horizontal Boring Mill.

POWER EQUIPMENT

Boilers

- 2 350 H. P. Sterling Water Tube, 150 lbs. steam working pressure.
- 3 250 H. P. Franklin Water Tube, 150 lbs. steam working pressure.
- 1 150 H. P. Babcock & Wilcox Water Tube, 150 lbs. steam working pressure.
- 6 150 H. P. 7½"x18" Horizontal Tubular, 125 lbs. steam working pressure.

CORLISS ENGINES

- 24"x42" Allis, left hand.
- 18"x43" Watts-Campbell, right hand.
- 16"x36" Allis, left hand.

2 90 K.W. A. C. Generators

DIRECT CONNECTED

WESTINGHOUSE GAS ENGINES

2 90 K.W. Westge. 220-440 Volts. 3 phase, 60 cycle 257 R. P. M. & 2 125 H. P. Westge. 3-Cyl. Vert. Gas Engines, all accessories. Can be seen running. Perfect condition.

H. R. WILSON—419 Pine St., St. Louis, Mo.

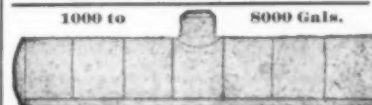
BOILERS

FOR SALE

1-300 H. P. Vogt Water Tube Boiler, 150 pounds, with Green Stoker and 60"x100" steel stack, used only 18 months.

1-100 H. P. Vogt Hand-fired Water Tube Boiler, 150 pounds, used one year.

HENRY VOGT MACHINE CO.
LOUISVILLE, KY.



We have several 8000-size with heater coils—guaranteed tight. Get them while you can.

ZELNICKER in ST. LOUIS

OIL ENGINES

- 70 H. P. De La Vergne, twin cylinder, \$1500.
- 35 H. P. De La Vergne, \$700.
- 20 H. P. De La Vergne, \$350.
- 15 H. P. De La Vergne, \$275.

DUZETS & SON

Hudson Terminal Bldg. NEW YORK

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FOR SALE

Made by the Good Roads Machinery Co. Used a short time only. New elevator belt to go with machine. Original cost \$500. Will sell for \$250 f. o. b. North Wilkesboro.

H. C. LANDON, North Wilkesboro, N. C.

2 300 H.P. Westinghouse Gas Engines; vert.; all accessories; \$2500 each
H. R. WILSON—419 Pine St., St. Louis, Mo.

FIRE PUMPS

- 2 500-gal. 14"x7½"x12" Underwriter's Fire Pumps.

AIR COMPRESSORS

- 1 18" x 20¼" — 13¼" x 24" Ingersoll-Sargeant Class A Straight Line, two-stage. Capacity 940 cu. ft.
- 1 20" x 20¼" x 30" Ingersoll-Sargeant, Class A, Straight Line. Capacity 900 cu. ft.
- 1 12" x 14¼" x 14" Ingersoll-Sargeant Class A Straight Line. Capacity 385 cu. ft.
- 1 12" x 12" x 16" Ingersoll-Sargeant Class C Straight Line. Capacity 275 cu. ft.
- 1 10" x 10" x 10" Ingersoll-Sargeant Duplex. Capacity 275 cu. ft.

ELECTRICAL EQUIPMENT

DIRECT CONNECTED UNITS.

- 150 K. W. 250-volt D. C. Crocker-Wheeler, with Wright Horizontal Tandem Compound 14½"x24"x16" Engine.
- 105 K. W. 220-volt 3-phase 60-cycle A. C. Westinghouse Alternator, with 15"x16" Buckeye Horizontal Automatic Engine.
- 50 K. W. 125-volt D. C. Westinghouse, with Westinghouse Vertical Compound Automatic Engine 10"x18"x10".
- Two 17 K. W. 125-volt D. C. Westinghouse Generators, direct connected to 7½"x7" Westinghouse Standard Vertical Engines.

MOTORS and GENERATORS

Motors, direct and alternating current, all sizes from 1 to 100 H. P., in stock for immediate delivery.

Send for our list.
Generators, large stock from 1 K. W. to 75 K. W., 110 and 220-volt, direct and alternating current.

SPECIAL: 2 500 K. W. 550-volt 3-phase 60-cycle General Electric Alternators, 360 H. P. M.

FRANK TOOMEY, Incorporated

127-131 North Third Street

PHILADELPHIA, PA.

Boilers Hoisting Engines Pumps

Every
Size
And
For
Every
Duty

HOWARD W. READ CO.
N. W. Corner Third and Arch Streets
PHILADELPHIA, PA.

ELECTRIC ELEVATORS

Complete first-class used equipments to meet all conditions and inspections. Installed ready to run, or will sell machines separately at a big saving.

KINZIE ELEVATOR WORKS
5 E. Kinzie Street Chicago

Water Tube Boiler FOR SALE

One 150 H. P. Babcock & Wilcox Water Tube Boiler, thoroughly overhauled and inspected by Hartford Steam Boiler Inspection & Insurance Co., with an allowance of 150 lbs. pressure.

KILBY FROG & SWITCH COMPANY
P. O. Box 914
BIRMINGHAM, ALA.

Tampa Machinery Exchange TAMPA, FLA.

Buy, Sell and Exchange Machinery of All Kinds

WRITE US YOUR WANTS

REFRIGERATING MACHINE

25-ton Pennsylvania Refrigerating Machine, Corliss engine driven, complete with all attachments. In fine condition.

Write for bargain price.

STERLING IRON & STEEL CO.
Tenth and Hamilton Sts., Phila., Pa.

Kron Scale For Sale

Dormant 1000-pound capacity. A1 condition.

JOHN MORRELL & CO.
SIOUX FALLS, S. D.

Gas Engine, Grain Pressers, Dryer, Bagging Machine, Safe, Scale, Motors, Dump Wagons, etc.

FOR SALE

A large gas engine, 14-in. belt; 3 large grain pressers, with conveyors, complete; a large grain dryer, for brewer's grain or fruit; bagging machine; large safe; 5-ton wagon scale; 5 different-sized motors; 10 steel-body back-dump grain wagons, suitable for coal, brick or scavenger; 12 Bain dump wagons, 1½ and 2 yards capacity.

415 W. Fayette Street
BALTIMORE, MD.

FOR SALE CHEAP

One Land Pile Driver, 3000-lb. hammer, 50 ways and steel rollers.
Four Steel-Guyed Stacks, 6'x100'.
One Steel Self-Supporting Stack, 10'x120'.

CENTRAL TRANSFER CO.
415 N. Front St BALTIMORE, MD.

Railroad and Contractors' Equipment and Supplies.

Georgia Car & Locomotive Company

ATLANTA, GA.

LOCOMOTIVES

FREIGHT CARS

PASSENGER COACHES

S. H. Std. Car Trucks for Logging

LARGEST STOCK REBUILT EQUIPMENT IN U. S.

RAILS—WAR PRICES

1500 tons 30 to 45 lb., with bars.
2500 tons 52 to 70 lb., with bars.
3500 tons 70 to 100 lb., with bars.
Any delivery. Inquire for prices.
We are always in the market for old railway material and relaying rails.

HIRSCH ROLLING MILL CO.
Office and Rolling Mills, St. Louis, Mo.

LIGHT STEEL RAILS

PROMPT DELIVERY.
8, 12, 16, 20, 25, 30, 35, 40 pounds per yard.
With Splices and Spikes.
UNITED STATES RAIL CO.
Manufacturers, Cumberland, Md.
Certificates of Inspection by Hildreth & Co., Inspecting Engineers of New York City, assuring absolutely first quality, furnished free of cost.

LOCOMOTIVE CRANE, 4-wheel Std. Ga., 40' boom, Interstate; LOCOMOTIVES, 6-wheel Switcher, 50 ton; 2—9x14 Porters, 1—7x10 Byers Geared; STEAM SHOVELS, No. 0 Thew, Little "Giant" Vulcan; BOILERS, Marion 60, 1—10 H. P. Upright. CARS, 6—5-yd. Western, 5—60M Center Dumps. All in Cincinnati and rebuilt.

FOR SALE RELAYING STEEL RAILS

About 700 Tons, 56 lbs. per yard, with plates
About 43 Tons, 58 lbs. per yard, with plates
About 600 Tons, 60 lbs. per yard, with plates
New Steel Rails
All Weights.

THE STEEL RAIL SUPPLY COMPANY
2 Rector St. New York, N. Y.

RELAYING RAILS
All Weights With Angle Bars
Send your inquiries to
E. C. SHERWOOD
48 Church St. NEW YORK

RAILS

HENRY LEVIS & COMPANY,

NEW AND RELAYING RAILS RAILROAD BRIDGES and EQUIPMENT

26 South Fifteenth Street, PHILADELPHIA

RAILS LOCOMOTIVES

RELAY RAILS

LOCOMOTIVES—Narrow and Standard Gauge. 150 Locomotives at our shops, 6 to 80 tons. Freight and Passenger Cars.

Largest Stock Locomotives
in United States

Southern Iron & Equipment Co.
ATLANTA, GA.

RELAYING RAILS
20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 80, 85, 90 and 100 lb., all with Fish Plates
NEW RAILS
8, 12, 16, 20, 25, 30, 35, 40, 45 lb., at manufacturer's prices.
LARGE TONNAGES—Carload and less carload lots, advantageously located for Southern delivery.
Splice Bars for any section rail in stock.
Frogs, Switches, Bolts, Nuts, Spikes, and all Track Accessories.
New and Second-hand Pipe, all sizes, with good Threads and Couplings.
Rebuilt Locomotives, Cars and Equipment.
All second-hand materials guaranteed. Subject to inspection during loading, or will ship subject to your approval at destination. Attractive Prices. Quick Shipment.
Before buying write for our bulletin.
L. B. FOSTER CO., Park Building, Pittsburgh, Pa.

RELAYING RAILS FOR SALE

500 Tons 80-lb. Rails.
500 Tons 90-lb. Rails.
Several Locomotives and Cars,

CHAS. HYDE
Commonwealth Bldg. PITTSBURGH, PA.

RAILS
AND
ACCESSORIES
NATIONAL STEEL RAIL CO.
I. H. COHN, Pres. and Genl. Mgr.
1030-32 Pierce Bldg. ST. LOUIS, MO.

Relaying Steel Rails

35 lb., 40-lb., 56-lb., 60-lb., 70-lb., 80-lb., 85-lb. and Angle Bars to lay same

Advantageously located for Southern delivery; also other weights of RELAYING RAILS, in different sections of the country; and NEW STEEL RAILS, all weights. We handle first-class Relaying Rails and do not select them from scrap. Let us know your requirements. We buy Rails fit to relaying, and pay spot cash.

ROBINSON & ORR, Pittsburgh, Pa.
Low Prices on New FROGS and SWITCHES.

Locomotives

Four wheel type

40 tons; 17"x24"; 160 lbs. pressure

Overhauled
Modern

E. H. WILSON & COMPANY
ARCADE BUILDING
PHILADELPHIA

The West Va. Rail Co. HUNTINGTON, W. VA.

Manufacturers Light Steel Rails

12, 16, 20, 25, 30, 35, 40 lbs. per yd.
We are also dealers in Relaying Rails.
All Sizes.

FOR SALE

LOCOMOTIVES, STEAM SHOVELS and RAILS

We have at our shops in Birmingham, thoroughly overhauled, 43 standard and 3 gauge Locomotives.

Also 10 Marion and Thew Shovels.
Also, 3000 tons of Relaying Rails, all weights. Write us for prices and terms.
Birmingham Rail & Locomotive Co., Birmingham, Ala.

LACKAWANNA STEEL SHEET PILING. RAILS, LIGHT AND HEAVY SECTIONS. STRUCTURAL SHAPES.

J. E. FRANKS, Agt.

729 Candler Building ATLANTA, GA.

Used Road Machinery

In Stock—Immediate Delivery

1 10-ton "Troquois" 3-wheel Macadam Road Roller.
1 "Ames Plow Co." Horse Puddle Roller.
1 "American" Road Scraper.

AIR COMPRESSORS (Steam Driven)

3 24"x24"x30" S. L. "Rand." Price \$1000 each.
1 24"x24"x30" S. L. "Ingersoll-Sergeant."
1 20"x20"x24" S. L. "Ingersoll-Sergeant."
1 12"x12"x12" S. L. "Bury."

MISCELLANEOUS CONTRACTORS' MACHINERY

1 50 H. P. "Penna. Boiler Works" Locomotive Boiler.
1 60 H. P. "Eric City" Economic Boiler.
1 No. 61 "Ransome" Concrete Mixer.
1 No. 66 "Ransome" Concrete Mixer.
1 No. 5 "Gates" Gyrotory Crusher, Style K.
1 No. 4 "McCully" Gyrotory Crusher.
1 No. 3 "McCully" Gyrotory Crushers.
Hoisting engines, pumps, electric motors, vertical boilers, slide-valve engines, iron and woodworking machinery in large assortment and variety.

L. F. SEYFERT'S SONS, Inc.

437 N. Third St. Philadelphia

Marion Steam Shovel and Locomotive

Marion A. A. 2½-yard Dipper.
Good condition. Price \$1500.

1—9 x 14 Dickson Locomotive.
\$575.

STERLING IRON & STEEL CO.

Tenth and Hamilton Sts., Phila., Pa.

Roller and Tractor FOR RENT

For Rent—Ten-ton combined Gasoline Roller and Tractor. Practically new.
Address

F. D. HORTON & SON, Houston, Tex.

Road Building Outfit—Cheap for Cash

Complete Crushing Outfit, including new steam drills. Also, eight-ton Gasoline Road Roller and Grader, which, if desired, will be sold independently of Crushing Outfit. All located at or near Loudon, Tenn. For full information address

THE H. L. KEY CONSTRUCTION CO.
805 James Building Chattanooga, Tenn.

FOR SALE

One Macadam Roller, standard make.
Recently overhauled. Write

LAWRENCE BROS.

Care Manufacturers Record

WANTED

One Tandem Paving Roller

Price must be right.
Send information to

GERBER CONTRACTING COMPANY
Care the Manufacturers Record

CONCRETE MIXERS

1 No. 14 Smith Mixer on steel skids with steam engine, power tilt, batch hopper; capacity, 46 cu. ft. dry.
1 No. 1 Smith Mixer on skids with steam engine only, standard hopper; capacity, 14½ cu. ft. dry.
1 12-ft. Koching Mixer with engine and boiler on steel trucks, with power loader and water tank.
GEORGE B. CURD
Merchants Bldg Cincinnati, Ohio

USED MOTOR CARS AND TRUCKS

ASK FOR LATEST LIST TODAY

MAR-DEL MOBILE CO.

BALTIMORE, MD.

REFERENCES—BRADSTREET OR DUN.

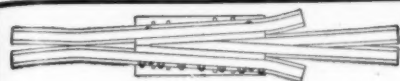
OLIVER DUMP & SPREADER CARS

(Dumps by Air or Hand)

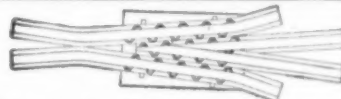
THE WM. J. OLIVER MFG. CO.

Only AIR DUMP CAR under absolute control of operator. Can be brought back to upright position, after passing center of gravity, before entire contents of car have been unloaded. This admits of equal distribution of material on both sides of track. Write.

KNOXVILLE, TENN.



Portable and Industrial Track
THE CINCINNATI FROG & SWITCH CO.
CINCINNATI, OHIO



Frogs, Switches, Crossings, Switch Stands, Rail Braces, Etc.

(3)

WM. WHARTON, JR. & COMPANY, Inc.

Frogs Switches Crossings
Special Work Guard Rail Clamps

R. C. HOFFMAN & COMPANY, Inc.
SOUTHERN SALES MANAGERS

Continental Building
BALTIMORE

Candler Building
ATLANTA

CONLEY FROG & SWITCH COMPANY

Manufacturers of Railroad Track Material
MEMPHIS, TENN.

2

THE AMERICAN FROG & SWITCH CO., Hamilton, Ohio
FROGS, SWITCHES, SWITCH STANDS, RAIL BRACES

NEW FIRST QUALITY

Steel Tee Rails Standard A. S. C. E.
Sections Weighing
12, 16, 20, 25, 30, 35, 40, 45, 50 and 60 Lbs. Per Yard
WITH ALL NECESSARY COMPLETE FASTENINGS

Careful Inspection Prompt Shipments Your Inquiries Solicited

SWEET'S STEEL COMPANY

Mills and General Offices

Philadelphia Office LAND TITLE BUILDING WILLIAMSPORT, PA. New York Office 1123 BROADWAY

Positively the Largest Independent Manufacturers of Light Section Steel Rails in the United States

Contractors' Plant For Sale

1 Marion Revolving Steam Shovel, Model 31, 3/4-yard dipper, mounted on traction wheels. Shop No. 2851. Practically as good as new. Price \$3250.
1 Marion Revolving Steam Shovel, Model 30, 3/4-yard dipper, mounted on trucks. Excellent condition and ready for work. Price \$2800.
1 Marion Steam Shovel, Model 20, 1 1/4-yard dipper. Good working condition. Extra cable, etc. Price \$2500.
12 Western Rotary Dump Cars, 1 1/4 yards. Price \$30 to \$50 each.
36 Western Dump Cars, 2 yards. Price \$25 to \$50 each.
6 Dump Carts, good as new. Price \$25 each.
24 National Dump Wagons. Price \$20 each.
70 Tons 20-lb. Steel Rails. Price \$20 per ton.
All located on Norfolk Southern Railroad near Norwood, N. C.
Terms on steam shovels and cars.

ROBERT L. SMITH,

ALBEMARLE, N. C.

FOR SALE

PIPE

Second-Hand

All Sizes, 1/2" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

Marine Metal & Supply Co.
167 South St. NEW YORK

Black Gum WOOD ROLLERS

FOR CONTRACTORS AND HOUSE MOVERS

Tougher and more lasting than any Maple Roller on the market.

O. O. OGDEN

613 Roumain Building, Baton Rouge, La.

FOR SALE

PIPE

NEW & SECOND HAND

Furnished with Threads and Couplings.

Suitable for All Practical Purposes

All Sizes In Stock Ready for Shipment

Send us your inquiries and get our prices. It will interest you.

Eagle Pipe Supply Company, Inc.
45 Broadway N. Y. C.

THE WEIR FROG CO.
Manufacturers of
Frogs, Switches, Crossings, Rail Braces, etc.
CINCINNATI, O.



Illustrated Catalog
on request

MOVE THE EARTH
WITH THE
WESTERN
Elevating Grader

Invaluable for Road Building,
Wagon Loading, etc. Endorsed by
many leading Engineers and High-
way Officials. It is increasing
others' profits. Why not add it
to your equipment?

WESTERN WHEELED SCRAPER COMPANY
AURORA, ILLINOIS

EARTH AND STONE HANDLING MACHINERY

The New Era Elevating Grader



The New Era has been on the market for over fifty years and has played a leading part in earth handling projects throughout the United States, Canada and numerous foreign countries. The New Era can be furnished in three different styles to suit varied conditions. Disk or mould board plows are furnished as desired.

Austin Gyrotory Crushers are built in eight sizes with either "Suspended" or "Supported" shaft, capacities ranging from 50 to 5,000 tons per day. Quarrymen, cement makers, mines and railroads are the most discriminating and exacting purchasers of this class of machinery. Their expressions of satisfaction with the Austin Gyrotory are the most convincing evidence of its excellent qualities.

THE AUSTIN MANUFACTURING
COMPANY

Chicago, Ill.

New York Office:
50 CHURCH STREET

Canadian Agents:
MUSSEN'S Ltd., MONTREAL



Industrial Locomotives

must often work under specially difficult conditions, and must be suitably designed for the service if they are to prove economical and efficient.



Built for Standard Oil Co. of New Jersey, Inc.

The locomotive shown above is operating on curves of 46 degrees and grades of 7 per cent. It is equipped for burning oil, but is so proportioned and designed that it can be changed to burn hard coal if desired. The track gauge is standard, and the total weight of the engine and tender is 90 tons.

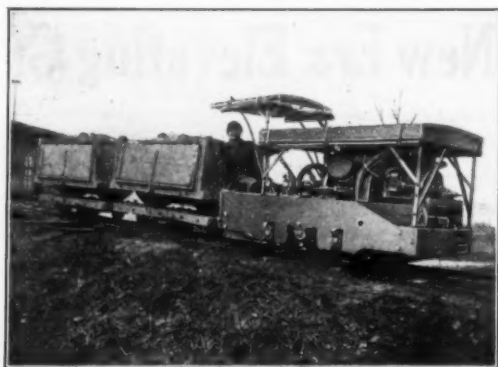
This locomotive was built by

The Baldwin Locomotive Works PHILADELPHIA, PA., U. S. A.

Cable Address, "BALDWIN PHILADELPHIA"

Represented by

Charles Riddell, 635 Railway Exchange, Chicago, Ill. F. W. Weston, 50 Church Street, New York, N. Y.
C. H. Peterson, 1610 Wright Building, St. Louis, Mo. George F. Jones, 407 Travelers Building, Richmond, Va.
A. Wm. Hinger, 722 Spalding Building, Portland, Ore.



For Continuous Service at Minimum Cost

in Factory Yards, Lumber Plants, Mines, Road Work and Excavation Work of all kinds there is an unsurpassed saving with the

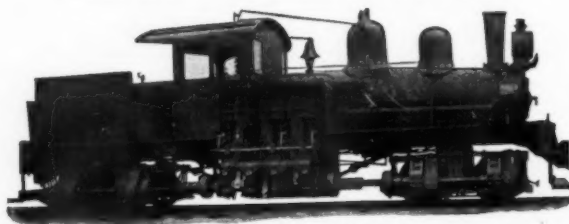
PLYMOUTH Gasoline Locomotive

A few of their advantages: (1) Simplicity—(2) Durability—(3) Economy—(4) Efficiency—(5) Low Price and Upkeep. Built in any gauge—20" to standard. Every bit of mechanism on the Plymouth is a proven success.

*Illustrated Catalog with Full Details
Gladly on Request.*

J. D. FATE COMPANY, Plymouth, Ohio

LIMA LOCOMOTIVES



SHAY GEARED LOCOMOTIVE

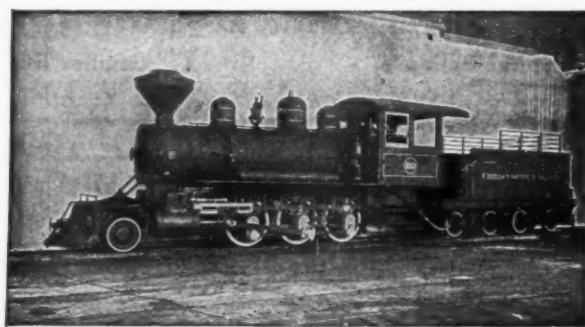
This locomotive has the advantage of three cylinders, giving an equal distribution of power, perfect balance on rail, least possible vibration. Write for catalogue "O."

BRANCH OFFICES

NEW YORK—50 Church Street NEW ORLEANS—Woodward, Wight & Co., Ltd.
CHICAGO—520 McCormick Building.

Lima Locomotive Corporation, Lima, Ohio

"PORTER LOCOMOTIVES"

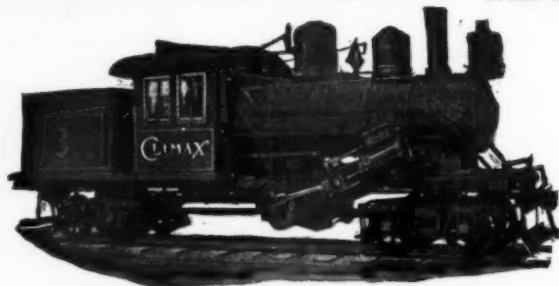


STEAM AND COMPRESSED AIR

For all Gauges of Track and Every Variety of Service, including Mine, Furnace, Lumber, Plantation, Industrial and Contractors' use. Locomotives 36" and 56 1/2" Gauge on Hand for Immediate Delivery.

H. K. PORTER COMPANY 412 Wood St. PITTSBURGH, PA.

CLIMAX IMPROVED GEARED LOCOMOTIVES FOR WOOD AND STEEL RAIL



GET CATALOG H

CLIMAX MANUFACTURING CO. 311 West Main St., CORRY, PA.
C. T. Patterson Co., New Orleans

BRANCHES:

Chicago, 12 and 14 South Canal Street.
New York, 362, 50 Church Street.
St. Louis, 564 Pierce Building.
New Orleans, 208 Godchaux Building.
Pittsburgh, 405 Oliver Building.
Winnipeg, 45 Canadian Life Block.
Vancouver, 175 Cordova Street.
St. Paul, 1308 Pioneer Press Building.
Seattle, 617 Western Avenue, F. H. Hopkins & Co., 236 St. James Street, Montreal, Que., Canadian Representative.



DAVENPORT LOCOMOTIVE WORKS, Davenport, Iowa

Diamond Drill Core Borings for Foundation Testing and Mineral Prospecting
Send for Book

HOLES

Any Angle—Any Depth—Anywhere
Sprague & Henwood, Inc. Birmingham, Ala. Scranton, Pa.

We can produce a complete core of the softest clay or the hardest flint.

DRILLING

Try us and be convinced. A letter from you will be appreciated.

H. R. AMELING PROSPECTING CO., INTERNATIONAL LIFE BLDG., ST. LOUIS, MO.

THE MARION STEAM SHOVEL COMPANY

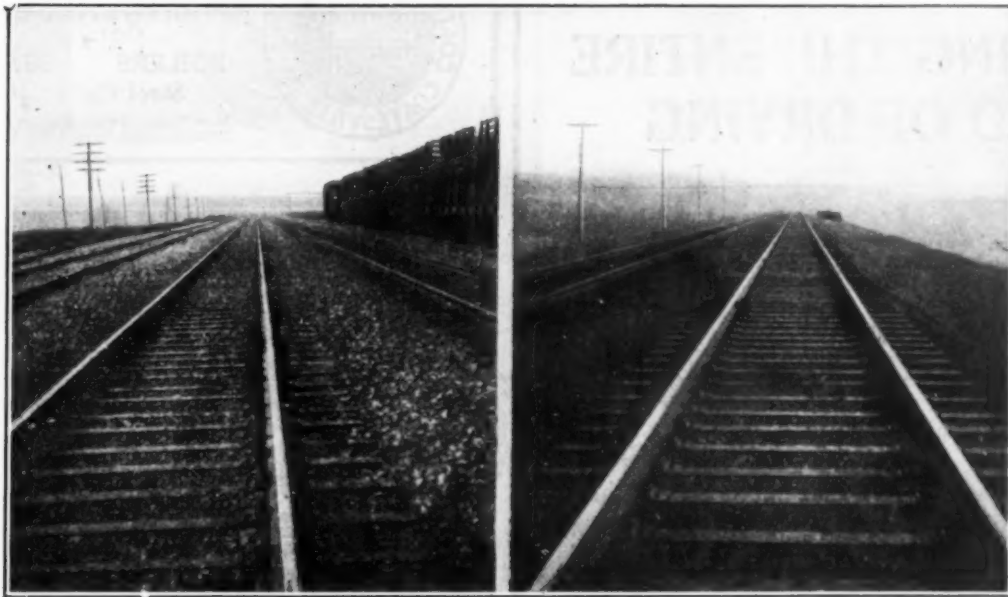
Builders of Railroad and Revolving Type Steam and Electric Shovels, Dipper, Elevator and Hydraulic Dredges, Scraper-Bucket Excavators, Ballast Unloaders, Railroad Ditchers and Log Loaders.

Station H

MARION, OHIO

CARNEGIE STEEL COMPANY

GENERAL OFFICES: PITTSBURGH, PA.



In your "SAFETY FIRST" crusade, do not neglect the safety insured by tracks laid with steel crossies.

Full information cheerfully given.

DISTRICT SALES OFFICES:

BIRMINGHAM
BOSTON
BUFFALO

CHICAGO
CINCINNATI
CLEVELAND

DENVER
DETROIT
NEW ORLEANS

NEW YORK
PHILADELPHIA
PITTSBURGH

ST. LOUIS
ST. PAUL

UNITED STATES STEEL PRODUCTS COMPANY PACIFIC COAST DEPARTMENTS:

LOS ANGELES

SAN FRANCISCO

PORTLAND

SEATTLE

EXPORT REPRESENTATIVES—UNITED STATES STEEL PRODUCTS COMPANY, NEW YORK, N. Y.

Movable or Multiple Loading Points

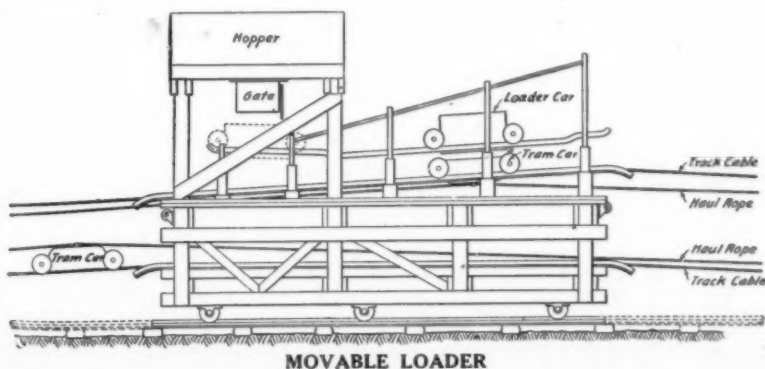
It often happens that our tramway has to serve two or more mine tunnels, etc. This involves no special construction other than to set up a separate automatic loader at each loading point. Assuming that the amount of material handled is the same at each point, then, if there are two loading points, each alternate car is so triggered as to engage its corresponding loader; if there are three loading points, every third car is triggered to engage its own loader, etc. The whole loading scheme is therefore as automatic as if there were but one loader at the terminal.

In many other cases, such as excavation in clay banks, gravel pits, sand banks, etc., there is only one loading point required, *but this must be movable* and so arranged as to travel directly with the steam shovel or other excavating machinery. We solve this problem in a very simple and practical manner.

The loader, instead of being a part of the terminal frame, is mounted on a separate frame of its own, which rolls on flanged car wheels. It is shifted from point to point by laying down temporary ties and two lengths of rail ahead of it, precisely as with a steam shovel.

Over the loader is a small hopper bin, usually of from 2 to 5 yards capacity. This bin has in it one or more undercut gates, which are hand-operated, and which discharge their load cleanly into the loader car beneath, which is then picked up automatically by the first car that comes along, the same as in standard work.

If scrapers or wheelbarrows are used for collecting the material, a movable inclined runway of plank is carried across the tramway. The wheelbarrows or scrapers drop their load directly into or alongside the throat of the hopper, which is in this case only equal in capacity to the loader car.



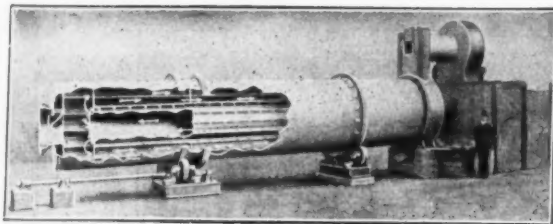
By this arrangement the steam shovel and the loader travel together back and forth across the pit, being shifted sideways from time to time as required.

In our next advertisement we will show how we treat the problem of multiple or movable dumping points.

Respectfully submitted,

AMBURSEN COMPANY,
Tramway Department
61 Broadway, New York

SEVEN DIFFERENT TYPES OF DRYERS COVERING THE ENTIRE FIELD OF DRYING



Showing Direction of Gases in Class "A" Dryer

No matter what material or product you dry there is a Ruggles-Coles Dryer of the type and size adapted to do the drying in the most expeditious, economical and thorough manner. With our many years of experience we can find the solution to your problem.

Write us the details today.

RUGGLES-COLES ENGINEERING CO.

50 Church Street
NEW YORK

McCormick Bldg.
CHICAGO

DIRECT FIRE AND STEAM-JACKETED DRYERS



The result of 15 years of development and improvement. For drying Tankage, Fish Scrap, Stone, Sand, and similar material. The endorsement by their many users is positive proof that they are a success in every way.

Get full details in our catalog.

BOILERS STACKS TANKS
Steel Plate Construction, etc.

NEW YORK OFFICE, Hudson Terminal Bldg., New York.
PHILADELPHIA OFFICE, Morris Bldg., Philadelphia.

Indirect Heat ROTARY DRYERS

Especially suitable for drying all kinds of GRANULAR MATERIAL

HERSEY MANUFACTURING CO.,

South Boston, Mass.

Automatic
Improved

For All Materials.

DRYERS

Economical—Efficient
Great Capacity
American Process Co.
68 William St.
New York.

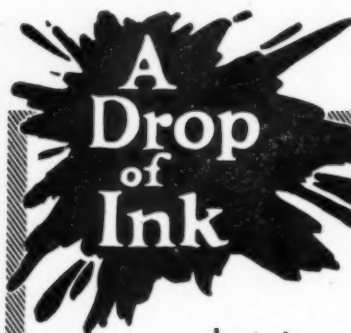
The C.O. BARTLETT AND SNOW CO. CLEVELAND, OHIO, U.S.A.

We make elevating and conveying machinery, drop forged chain, shaking and revolving screens, car hauls, coal and ore conveyors, retarding conveyors, gypsum machinery, paint machinery, mining machinery, mechanical dryers, universal excavators and soft mud brick machinery.

CANNING MACHINERY—Cans, Cases, Labels

A. K. ROBINS & COMPANY

116 Market Space, Baltimore, Md.



Makes
Thousands
Think --

but to make it a profitable investment for your business you must see that the pictures and type-talk create the right kind of thoughts.

We plan, design and prepare advertisements that catch the eye, hold the attention and sway the opinion of the public.

Our Idea Department is at your service. — — — No charge for consultation.

BALTIMORE-MARYLAND ENGRAVING CO.

28 SOUTH CHARLES STREET

ARTISTS

ENGRAVERS

AD-EXPERTS

ARTISTS

ENGRAVERS

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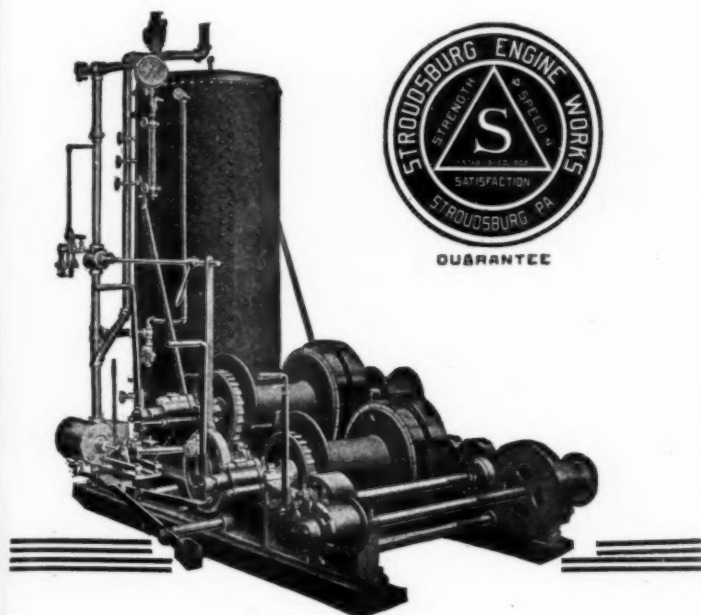
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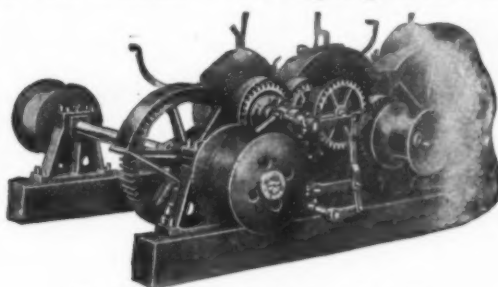
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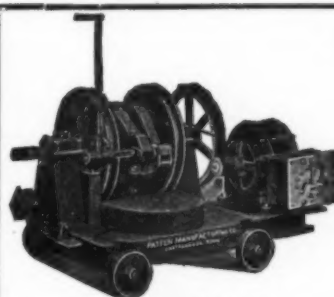


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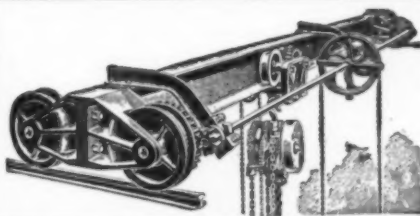
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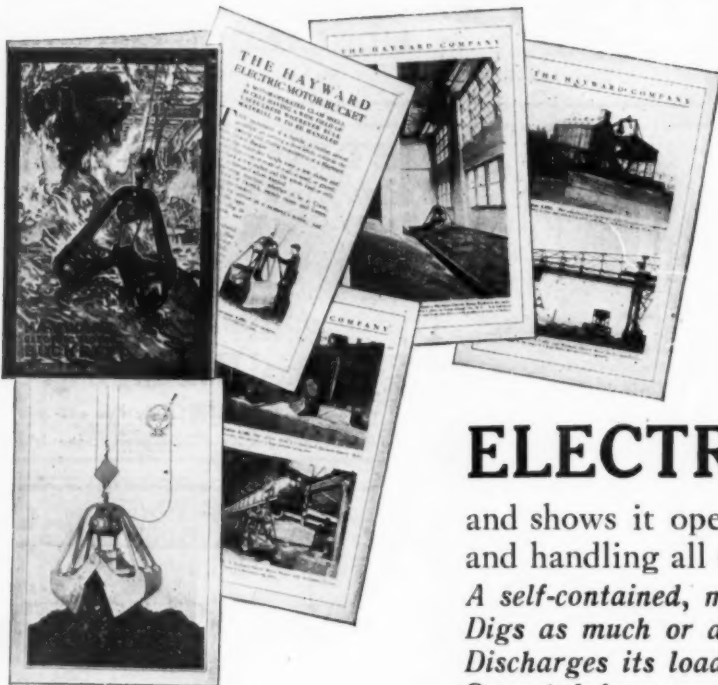
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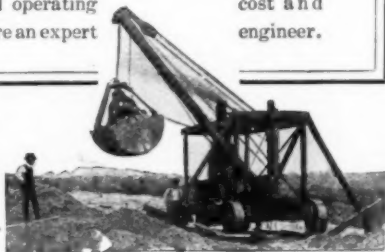
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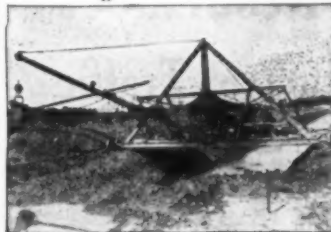
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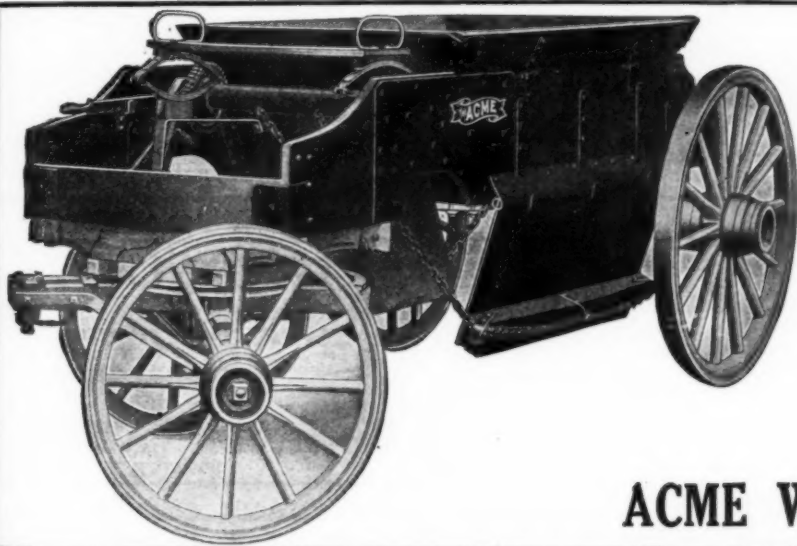
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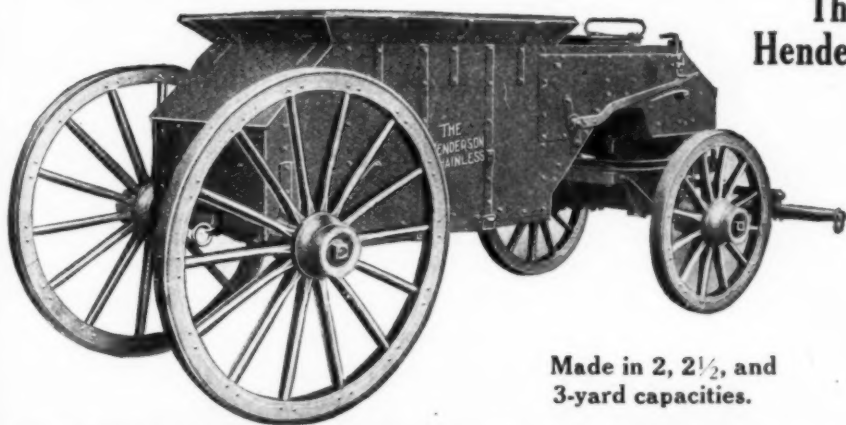
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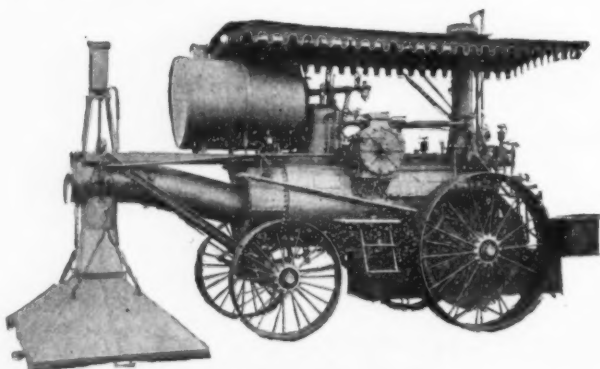
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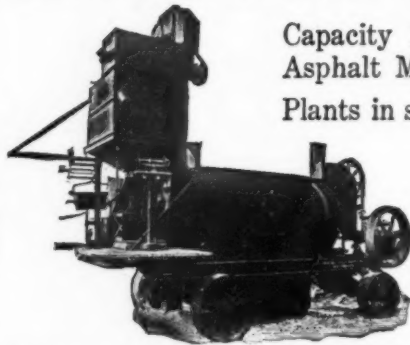
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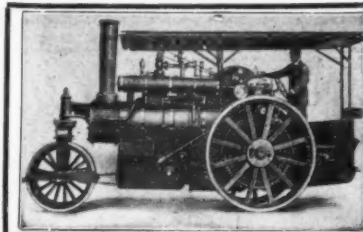


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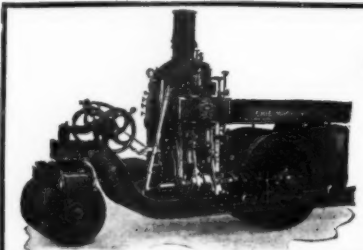
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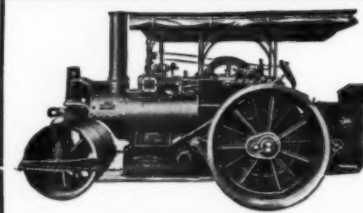


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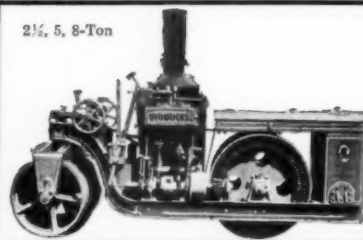


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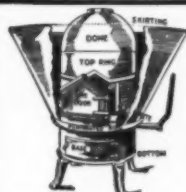
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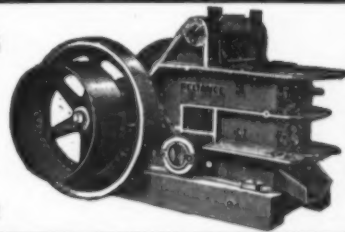
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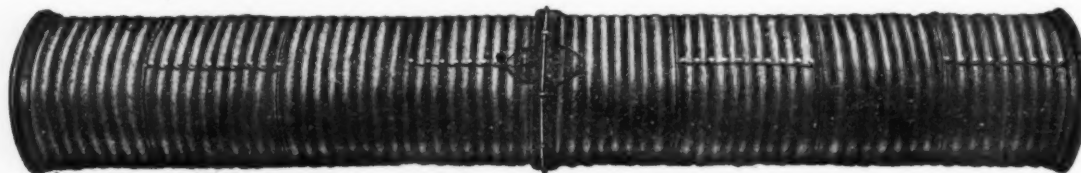
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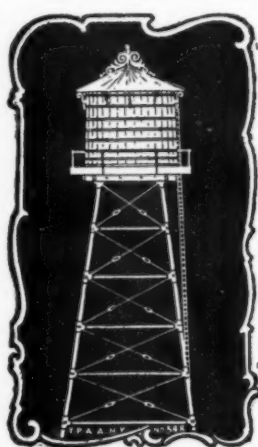
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Elevated Steel Tanks

Hemispherical and Segmental Bottoms

Manufactured at Pittsburgh, Pa.
Erected Anywhere

We have special designs for Municipal, Rail-
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Catalog No. 3 sent upon request.

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Pittsburgh, Pa., 903 Curry Bldg. New York City, 54 Church St.
Dallas, Texas, 1230 Praetorian Building
San Francisco, Cal., 4316 Rialto Bldg.

Des Moines Bridge & Iron Co.

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The South's Power in the South

Are you interested in machinery of any kind? If so, write the undersigned:

**We are Southern Manufacturers and Make our own
Engines and Boilers and guarantee them; when you deal
with us you get the benefit of over 50 years experience.**

Our Engines and Boilers are now in use in many of the Gineries, Oil Mills, Saw
Mills and other manufacturing enterprises throughout the Southern States and
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We also make a specialty of

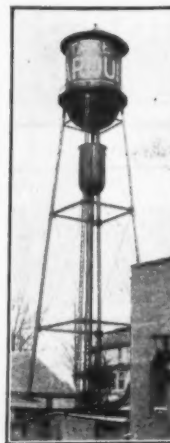
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STANDPIPES
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Tanks Anywhere for
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**TANKS
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Mechanically Correct in Design and Workmanship
Any Size. Erected Anywhere

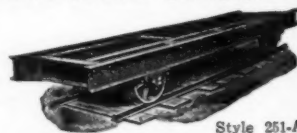
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OF ALL KINDS, FOR ALL PURPOSES
SWITCHES, TURNABLES
Complete Industrial Railway Equipment
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Style 251-A



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**MEMPHIS STEEL
CONSTRUCTION COMPANY**
OF PENNSYLVANIA

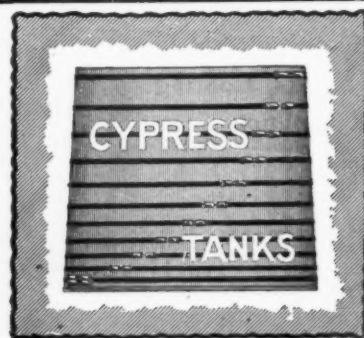
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Cypress Tanks

Unequaled for railroad, factory and all
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Water Works and Fire Department
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DART UNIONS

Have Bronze to Bronze at
the Joint—No Corrosion

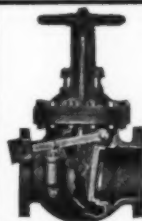
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Stave, Heading, Keg, Tub and Barrel Machinery

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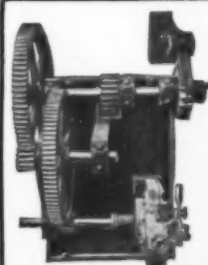
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Revolving Type. Quick acting. Strong.
Simple. Easy to operate. Get new
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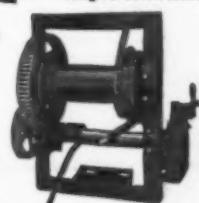
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For raising and lowering
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IF you could install a pipe line that would last a hundred years you wouldn't consider first cost, would you?

Cast Iron Pipe has a record of *250 years* of uninterrupted service underground, under pressure.

It defies all the elements that are so destructive to other kinds of pipe, and is cheaper pound for pound than any metal pipe used underground.

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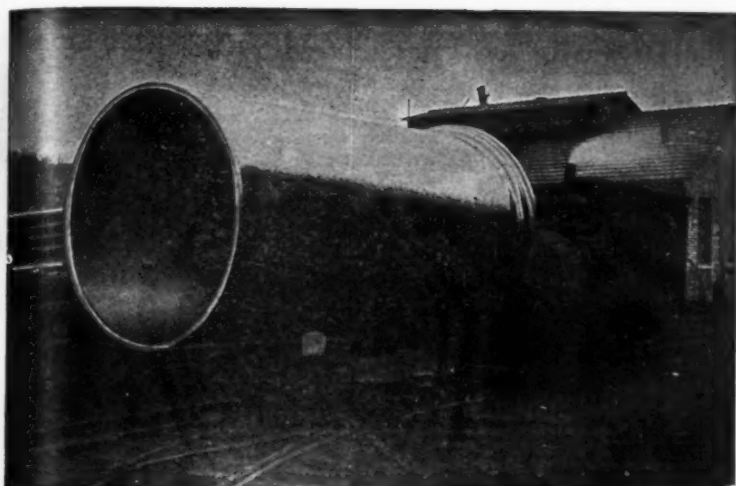
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All Regular Sizes—2-Inch to 84-Inch

FOR

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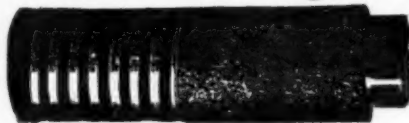
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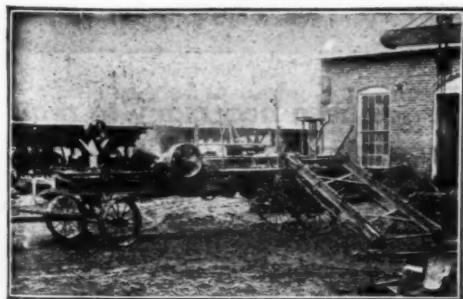
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You can save this by installing 48-inch or
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and it lasts as long as Cast Iron Pipe. It's easier and cheaper
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CROSS TIES

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bottoms, chime bottoms, hoods, latest pattern
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Manufacturers of Cast Iron Water and Gas Pipe, Special Castings, Flange Pipe and
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Sewer Pipe

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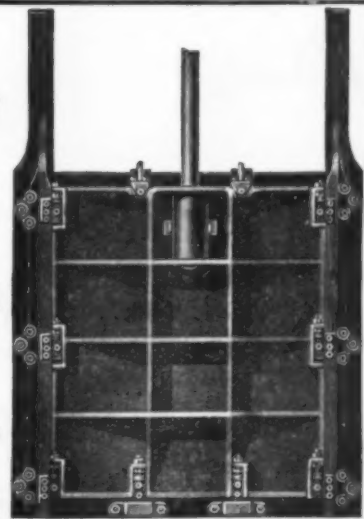
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Few As GoodEstimates and Plans Furnished
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White Building Makes White Truck Performance a Law unto Itself in Length as in Perfection of Service

COMPARISONS may be "odious," but they eliminate the unfit.

The comparative test of side-by-side service is the only fair way to find out which truck is doing the work steadiest, at lowest cost and for the longest time. Because of such tests White Trucks predominate in most large fleets in the country.

Faithfully, year in and year out, a White can be relied on to do your work at a big saving per ton mile. It keeps, practically, in constant commission, and operates with mechanical perfection which is almost a "thinking" intelligence.

And in a short time it pays for itself with big dividend on the investment. And long after the time when, judged by ordinary standards, it would have ceased to exist on the company's books, the White keeps on going.

It stays on the job; it defies the junk pile; it knocks into a cocked hat all previous ideas of motor truck "depreciation."

Efficiency reasons dispose of the laggards in all departments of the world's work. They explain the striking preponderance of White Trucks. Ask any White owner; he has figured it out in dollars and cents.

We shall be glad to make suggestions on your trucking problem.

Exhibiting at the Transportation Building, Panama-Pacific International Exposition, San Francisco

THE WHITE COMPANY
CLEVELAND
LARGEST MANUFACTURERS OF COMMERCIAL MOTOR VEHICLES IN AMERICA

Illustrations of White Trucks from various companies and cities include:

- INDEPENDENT BREWING CO. 7 WHITE TRUCKS
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- KAUFMANN & BAER CO. 40 WHITE TRUCKS
- FRANK PARMELEE CO. 9 WHITE TRUCKS
- NATIONAL CASKET CO. 14 WHITE TRUCKS
- MANDEL BROS. 17 WHITE TRUCKS
- CITY OF NEW YORK 12 WHITE TRUCKS
- AMERICAN CAN CO. 8 WHITE TRUCKS
- EATON CO. 14 WHITE TRUCKS
- SPEAR & CO. 15 WHITE TRUCKS
- BALTMAN & CO. 35 WHITE TRUCKS
- GREENFIELD ELECTRIC LIGHT & POWER CO. 10 WHITE TRUCKS
- GIMBEL BROTHERS 54 WHITE TRUCKS
- ARMOUR & COMPANY 73 WHITE TRUCKS
- THE CLEVELAND AKRON BAG CO. 19 WHITE TRUCKS
- W.B.J. SLOANE 16 WHITE TRUCKS
- SAKS & COMPANY 10 WHITE TRUCKS
- THE BELL CO. 12 WHITE TRUCKS
- CITY OF PITTSBURGH 15 WHITE TRUCKS
- SUPREME BAKING CO. 19 WHITE TRUCKS
- ATLANTIC ICE & COAL CORPORATION 15 WHITE TRUCKS
- THE HUB 10 WHITE TRUCKS
- UNITED STATES POST OFFICE, DEPT. 28 WHITE TRUCKS
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- STANDARD OIL CO. OF INDIANA 100 WHITE TRUCKS
- CITY OF BOSTON 21 WHITE TRUCKS

Since these illustrations appeared in the Manufacturers Record it has been necessary to remake this plate because 111 trucks have been added to above fleets

NOTE—In the last 10 days 29 additional White trucks have been delivered, thus making total 140 in place of 111

New York - - - - Broadway at Sixty-Second Street
Chicago - - - - - 2635-2645 Wabash Avenue
Philadelphia - - - - 216-220 North Broad Street
Boston - - - - - 930 Commonwealth Avenue
San Francisco - - - - Market St. and Van Ness Ave.
Baltimore - - - - Mount Royal and Guilford Avenues

Pittsburgh - - - - Craig Street and Baum Boulevard
Atlanta - - - - - 63-65 Ivy Street
St. Louis - - - - - 3422 Lindell Boulevard
Washington - - - - 1233 20th Street, N. W.
New Orleans - - - - 750 St. Charles Avenue
Newark - - - - - 33-35 William Street

Seattle - - - - - 1514 Third Avenue
Memphis - - - - - 278-280 Monroe Avenue
Dallas - - - - - 2025-2027 Commerce Street
Toronto - - - - - 14 Alexander Street
Montreal - - - - - Forum Building
Winnipeg - - - - - 230 Fort Street

OPPORTUNITIES IN THE SOUTH

For Manufacturers, Investors, Merchants, Farmers and Homeseekers

To the

MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama, which are traversed by the

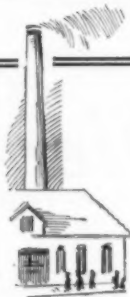
Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

J. M. MALLORY, Industrial Agent
SAVANNAH, GEORGIA



RICHMOND, VA. Offers You These ADVANTAGES

Free manufacturing and other industrial sites of any size desired. Unlimited quantity of electric current can be had at one cent per K. W. hour.

Abundant supply of operatives living within walking distance.

Ample trackage facilities.

*For Full Particulars,
Address*

Rappahannock Land & Development Corp.
P. O. Box 54, Station B RICHMOND, VA.

THE WEST POINT ROUTE

Atlanta & West Point Railroad

THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for
Truck, Fruit, Stock and General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities
Write for information.

E. S. CENTER, General Agent, ATLANTA, GA.

Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

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J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the
Illinois Central Railroad

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MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA
IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI
FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 East 11th Place, CHICAGO, ILL.

**Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina,
South Carolina, Tennessee, Virginia, Southern Illinois, Southern Indiana**

What We Offer You

THERE are millions of acres of the most productive farm, pasture and orchard lands in the South offering distinct advantages to homeseekers. Good farmers can make more money in the South from the labor and capital invested than elsewhere in America. Careful investigation will prove this and also that the most pleasant, healthful home conditions are in this section. One can find no better region for dairying, or for poultry and live stock raising. Abundant grasses and forage plants, pure water, the long grazing seasons, the low cost of production and the good markets make the South unequalled today in opportunities for these industries. Nearly all authorities who have studied the situation agree that this is so. For fruit and truck raising, for general or special farming, there are all conditions for success. Lands in good locations are to be had at lowest prices for equally productive lands anywhere.

The South not only offers the opportunity for farm homeseekers, but needs them. The Southern Railway Lines want settlers in their territory who can turn the available lands into highly productive places to furnish the foodstuffs necessary for the South itself and to take advantage of the outside markets which may be supplied. They are anxious to build up their territory as part of their efforts to make their own properties more productive.

For this reason their Industrial and Agricultural Department is maintained. Its co-operation is offered in every way possible to the homeseeker who will investigate the opportunities of the South; every assistance is extended which will enable him to find the location where are the home conditions he desires and which will give him prosperity. Immigration agents will advise with him. The information about lands, crops and the various sections and conditions along the roads, carefully collected by the companies, is at his command. Careful attention will be given to secure for him the special information desired on particular subjects or localities. Booklets and other printed matter will be sent on application.

After the homeseeker is located, trained and practical agricultural field agents, live stock, dairy and poultry agents familiar with local conditions will be at his service in solving any of the problems which his new location may bring. Market agents will help him to find the best market for his products.

What we do for the homeseeker, we also do for the manufacturer looking for a location for his plant. Industrial agents will help him solve the questions as to the proper point where raw materials may be satisfactorily assembled; where labor, power, transportation and market conditions are best; where necessary lands are properly located and to be had; where local capital, if wanted, will join in building the plant, and where all the other conditions which help to make the success of the industry and the welfare of its labor are to be found.

We offer our services in behalf of a territory reached by nearly 10,000 miles of railway, the people of that territory and a company which is earnestly at work in co-operation with every person or interest affected to build up the territory and advance the fortunes of those who are developing the lands and the many opportunities in the South.

Southern Railway
Southern Railway in Mississippi
Mobile & Ohio Railroad
Georgia Southern & Florida Ry.
Virginia & Southwestern Ry.
Augusta Southern Railroad

M. V. RICHARDS
Industrial and Agricultural Commissioner
WASHINGTON, D. C.

Danville & Western Railway
Tallulah Falls Railway
Blue Ridge Railway
Hawkinsville & Fla. South'n. Ry.
Macon & Birmingham Railway
Northern Alabama Railway

Fine Factory Sites

At Belle Isle, Richmond, Virginia

Low Cost

Cheap Electric Power

Good Labor Supply

Complete Water and Rail Transportation Facilities

WITHIN the past year this company has developed a very fine hydro-electric plant at Belle Isle in the corporate limits of the City of Richmond, and it controls about fifty acres of land on the island which is admirably adapted for manufacturing sites.

Belle Isle lies in the James River, between Richmond and South Richmond, and is connected on each side by highway and railroad bridges.

In addition to cheap electric power, factories locating here will have splendid transportation facilities, both rail and water, free water from the James River and an excellent labor supply to draw from.

The bridges reaching this property are private and watchmen stationed on them keep idlers and other disturbing elements from interfering with employees.

Richmond has five important trunk line railroad systems which afford the best of facilities for reaching all parts of this country, while water shipment by the James River to Norfolk provides an outlet to coastwise trade and to the markets of the world.

In both Richmond and South Richmond is an abundance of good labor and the private highway bridges from each city give ready access to the property.

We are now ready to consider favorably making leases at a nominal charge for a term of years subject to renewal for manufacturing enterprises locating on Belle Isle and contracting for electric power.

The complete manufacturing requirements offered by this property are worthy of your special investigation. Any facts desired will be gladly furnished.

Virginia Railway and Power Company

Richmond, Virginia

The European War by greatly diminishing the supply of many chemical products needed by industries of America, emphasizes the importance of raw materials along the Clinchfield for varied chemical plants, and the

Splendid Openings for Chemical and Mineral Industries

Nature has been lavish along the line of this railway, and the wide distribution and superior quality of the minerals in the Clinchfield territory give promise of ample returns to those who will develop and fabricate these products for the use of man.

Their value to the arts and manufactures can be easily established and their application in many industries awaits the progressive factor who recognizes the future supremacy that is rapidly coming to the industrial South.

The Clinchfield territory contains the following minerals which can be developed profitably:

Kaolin	Talc	Slate	Limestone
Marble	Mica	Rutile	Soapstone
Quartz	Zinc	Asbestos	Silica Sand
Barytes	Coal	Chromite	Manganese
Bauxite	Lead	Dolomite	Soda Feldspar
Tripoli	Ochre	Monazite	Potash Feldspar

Some of these may be suitable to your industry.

Perhaps you are seeking a better and cheaper source of some of the above materials, raw or prepared.

Or an expansion of your present business by establishing a plant in the South.

Or a location for a new industry which gives promise of a large and progressive market.

Excellent transportation facilities, ideal climate and good labor conditions, abundance of raw materials, cheap fuel, water-powers and low freight rates combine to present the attractive advantages offered in the Clinchfield territory.

Manufacturers and investors will be given every opportunity and assistance in the investigation of the mineral resources along this railroad.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

\$1,000,000 for Dairy Products

Goes out of Florida every year. As Florida has all the advantages of climate and soil for a wide variety of field crops and pasture grasses

Here is the Place For Profitable Dairy Farming

Florida needs thousands of intelligent dairy farmers who will make the most of the unparalleled advantages that this State has to offer them.

Every year more than a million dollars is sent to other States to pay for needed dairy products, when it is a matter of common knowledge among Florida dairymen that conditions in this State are favorable not only to the production of all the milk and cream used, but with proper effort Florida can produce immense quantities for export.



A FLORIDA DAIRY HERD OF JERSEYS.

In the first place, the protein feeds necessary to feed dairy stock can be grown in Florida in great profusion and in great variety. Cowpea hay, analyzing sixteen per cent. protein, is equal pound for pound to the best bran. Velvet bean hay and beggarweed are also high in protein content. In carbohydrate feeds we have an abundance in Japanese cane, sweet potatoes, cassava and others. There are any number of other feed crops and pasture grasses in addition to corn silage that can be produced in quantities in nearly all parts of the State. No greater opportunity exists in Florida today than that which is open to the dairy farmer. The supply of dairy products is always far short of the demand, necessitating, as stated above, sending out of the State over one million dollars a year for such products.

A splendid home market, therefore, is awaiting those who will take advantage of Florida's opening for dairy farming.

"Live Stock Farming in Florida" is the title of an interesting illustrated booklet containing a fund of authentic data and information on this subject. We will gladly send it to those desiring to investigate this opportunity.

FLORIDA EAST COAST RAILWAY

(FLAGLER SYSTEM)

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

CLASSIFIED INDEX OF ADVERTISEMENTS.

Abrasive Materials.

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Accountants.

Armstrong, Allan Gordon, Norfolk, Va.
Baltimore Audit Co., Baltimore, Md.
Black & Co., Baltimore, Md.
Buck, Chester H., Chattanooga, Tenn.
Machen Audit Co., Washington, D. C.

Accumulator. (Hydraulic.)

The French Oil Mill Mch. Co., Piqua, Ohio.

Agricultural Implements.

Myers & Bro., F. E. Ashland, O.

Air Compressors. (Stationary and Portable.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., Chicago, Ill.
Claxton Air Compressor Plant, Cambridge, Mass.
De La Vergne Machine Co., New York, N. Y.
General Electric Co., Schenectady, N. Y.
Laidlaw-Dunn-Gordon Plant, Cincinnati, Ohio.
Sullivan Mch. Co., Chicago, Ill.

Aluminum Products. (Bars, Sheets, Tubes.)

Aluminum Company of America, Pittsburgh, Pa.

Ammonia Valves and Fittings.

Frick Co., The, Waynesboro, Pa.
York Mfg. Co., York, Pa.

Anti-Friction Metals.

Bailey Leiby Co., Charleston, S. C.

Architects.

Oleah, Wm. Newton, Norfolk, Va.
Grimmer & Toussaint, Tampa, Fla.
Kimball, Herbert S., Boston, Mass.
McDonald, Eng. Co., Robert M., Kansas City, Mo.
Muir, Hunter & Co., Washington, D. C.
Strine, J. E., Greenville, S. C.

Architects' Supplies.

Starrett Co., L. S., Athol, Mass.
Weber & Co., Philadelphia, Pa.

Architectural Iron Work.

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Dietrich Brothers, Baltimore, Md.
Schreiber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Wks., Louisville, Ky.

Arc Lamps. (See Lamps) [Arc and Incandescent.]

Art Glass.

Hinswanger & Co., Memphis, Tenn.

Asbestos.

Asbestos Protected Metal Co., Pittsburgh, Pa.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

Asbestos Products.

Asbestos Protected Metal Co., Pittsburgh, Pa.
Johns-Manville Co., H. W., New York, N. Y.

Asphalt.

Barber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Asphalt Mixers.

Erie Machine Sheds, Erie, Pa.

Equitable Asphalt Maintenance Co., Kansas City, Mo.

Asphalt Surface Heaters.

Equitable Asphalt Maintenance Co., Kansas City, Mo.

Asphalt Paving Plants.

Barber Asphalt Paving Co., Iroquois Works, Buffalo, N. Y.

Barber Asphalt Paving Co., Iroquois Works, Buffalo, N. Y.

Asphalt Paving Repair Plants.

Equitable Asphalt Maintenance Co., Kansas City, Mo.

Ruggles-Coles Engineering Co., New York, N. Y.

Auditors.

Armstrong, Allan Gordon, Norfolk, Va.
Baltimore Audit Co., Baltimore, Md.
Black & Co., Baltimore, Md.
Buck, Chester H., Chattanooga, Tenn.
Machen Audit Co., Washington, D. C.

Automobile. (Gasoline Passenger.)

White Co., The, Cleveland, Ohio.

Automobiles. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Axles. [See Car Wheels, Axles and Trucks.]

Babbitt Metal. [See Anti-Friction Metal.]

Ballast. (Railroad.)

American Ballast Co., Knoxville, Tenn.
Bald Mountain Quarry, Newon, N. C.
Chickamauga Quarry & Const. Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Weston & Brooker Quarry Co., Columbia, S. C.

Bankers and Brokers.

Delaware Trust Co., Wilmington, Del.
Edwards, Geo. B., New York, N. Y.
Electric Bond & Share Co., New York, N. Y.
Halsey & Co., N. W., New York, N. Y.
Leach & Co., A. B., New York, N. Y.
Mercantile Trust & Deposit Co., Baltimore, Md.
New First National Bank, Columbus, O.
Noyes & Co., John, Chicago, Ill.
Peabody, Huntington & Co., Chicago, Ill.
Powell, Garard & Co., Chicago, Ill.
Provident Savings Bank & Trust Co., Cincinnati, O.

Banks.

First Nat'l Bank, of Key West, Key West, Fla.
First National Bank, Richmond, Va.
Merchants' Mechanical Nat'l Bank, Baltimore, Md.
New First National Bank, Columbus, Ohio.
National Exchange Bank, Baltimore, Md.
Provident Savings Bank & Trust Co., Cincinnati, O.

Bank and Office Railings and Grilles. (Iron)

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Iron Fence Co., Cincinnati, Ohio.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Eureka Supply Co., Chattanooga, Tenn.
Jackson Iron & Bronze Works, Jackson, Tenn.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.

Barges. (Steel)

American Bridge Co., of New York, N. Y.

Bar Iron. (Refined and Galvanized.)

Houma-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Bars. (Steel, Rounds, Flats and Squares.)

Gulf States Steel Co., Birmingham, Ala.
Pardee Works, Co., Perth Amboy, N. J.

Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)

Cincinnati Iron & Steel Co., Cincinnati, O.
Corrugated Bar Co., Buffalo, N. Y.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Laclede Steel Co., St. Louis, Mo.

Bearings. (Graphite and Bronze.)

Graphite Lubricating Co., Bound Brook, N. J.

Bearings. (Oilless.)

Graphite Lubricating Co., Bound Brook, N. J.
Metalline Co., Long Island City, N. Y.

Bedford Stone

Bedford Steam Stone Works, Bedford, Ind.

Belting. (Leather, Canvas, Rubber.)

American Supply Co., Providence, R. I.
Bailey-Leiby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Druid Oak Belting Co., Inc., Baltimore, Md.
Frederick Belting Co., St. Louis, Mo.
Gandy Belting Co., Baltimore, Md.
Goodrich Co., B. F., Akron, O.
Goodyear Tire & Rubber Co., Akron, Ohio.
Graton & Knight Mfg. Co., Worcester, Mass.
Main Belting Co., Philadelphia, Pa.
Schieren Co., Chas. A., New York, N. Y.
Smith-Courtesy Co., Richmond, Va.

Belting. (Chain.)

Bartlett & Snow Co., C. O., Cleveland, O.
Calwell & Sons Co., Chicago, Ill.
Jeffery Mfg. Co., Columbus, O.
Link-Belt Co., Philadelphia, Pa.

Belt Cement.

Graton & Knight Mfg. Co., Worcester, Mass.

Belt Conveyors.

Jeffery Mfg. Co., Columbus, O.

Belt Dressing.

Dixon Crucible Co., Joseph, Jersey City, N. J.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.

Belt Lacing. (Leather.)

Graton & Knight Mfg. Co., Worcester, Mass.

Belt Lacing and Supplies. [See Belting.]

Leather, Canvas, Rubber.]

Bicarbonate Soda. (Sap State Lumber Dip.)

Church & Dwight Co., New York, N. Y.

Billets. (Basic Open Hearth Quality.)

Gulf States Steel Co., Birmingham, Ala.

Blackboards. (Slate.)

East Bangor Con. Slate Co., The, East Bangor, Pa.

Johnson, E. J., New York, N. Y.

Blocks. (Paving Crossed.)

American Crossed Works, New Orleans, La.

Block Fillers

Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Blowers and Exhaust Fans.

American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
General Electric Co., Schenectady, N. Y.
Green Fuel Economiser Co., Matewan, N. Y.
Raymond Bros. Impact Fan Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Blueprinters.

Chidrey Co., Richmond, Va.

Boilers.

Babcock & Wilcox Co., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Case-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago House Wrecking Co., Chicago, Ill.
Coatesville Boiler Works, Coatesville, Pa.
Cole Mfg. Co., R. D., Newnan, Ga.
Hartley Boiler Works, Montgomery, Ala.
Kessler Co., E. Williamsport, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works, Burlington, Ia.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Southern Boiler & Tank Works, Memphis, Tenn.
Vaik & Murdoch Iron Works, Charleston, S. C.
Vogt Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
Zelicker Supply Co., Walter A., St. Louis, Mo.

Boiler Covering.

Chesapeake Roofing & Pipe Covering Co., Inc., Baltimore, Md.

Boiler Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Boiler Tubes. [See Tubes, Boiler.]

Bolts, Nuts, Rivets, Studs and Washers.

Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, O.
Upon Nut Co., The, Cleveland, O.

Bonds. (Surety, etc.)

Fidelity & Deposit Co. of Baltimore, Baltimore, Md.

Bottling Outfits.

Viller Mfg. Co., Milwaukee, Wis.

Brass Goods.

Bailey-Leiby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Lankenshimer Co., The, Cincinnati, Ohio.
Powell Co., Wm., Cincinnati, O.

Brass Railing and Grilles.

Newman Mfg. Co., Cincinnati, Ohio

Brewers' Machinery.

Viller Mfg. Co., Milwaukee, Wis.

Brick. (Acid.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Brick. (Building.)

Am. Enamelled Brick & Tile Co., New York, N. Y.
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Hood Brick Co., B. Midlin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Corp., Johnson City, Tenn.
Scott Brick Co., Alex. A., Knoxville, Tenn.
Stanford Brick Co., Macon, Ga.

Brick. (Enamelled.)

Am. Enamelled Brick & Tile Co., New York, N. Y.

Brick. (Fire.)

Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Kilian Fireproofing & Brick Works, Kilian, S. O.
Louisville Fire Brick Works, Highland Park, Ky.
Mexican Brick & Fire Clay Co., Mexico, Mo.
Pomona Terra-Cotta Co., Pomona, N. C.
Standard Brick Co., Macon, Ga.
Sivens' Sons Co., H., Macon, Ga.
Union Mining Co., Mt. Savage, Md.

Brick. (Paving.)

Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingite Shale Brick Co., Birmingham, Ala.
Dunn Wire-Cut-Log Brick Co., Connesset, Ohio
Southern Clay Mfg. Co., Chattanooga, Tenn.
Southern Paving Brick Mfg. Assn., Birmingham, Ala.
Standard Brick Co., Macon, Ga.

Brick and Clayworking Machinery and Supplies.

Chase Fdry. & Mfg. Co., Columbus, O.
Fernholm Brick Machinery Co., St. Louis, Mo.
Frees & Co., E. M., Galion, O.
Steele & Sons, J. O., Statesville, N. C.

Bridges. (Concrete.)

Cunningham Construction Co., Shreveport, La.
Luten, Daniel B., Indianapolis, Ind.
Requarth Co., O. W., Charlotte, N. C.
Turner, O. A. P., Minneapolis, Minn.

Bridges. (Rolling Lift.)

Scherzer Rolling Lift Bridge Co., Chicago, Ill.

Bridges. (Steel.)

American Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Case Crane & Engineering Co., Columbus, Ohio.
Champion Bridge Co., Wilmington, Ohio.
Chicago Bridge & Iron Works, Chicago, Ill.
Cunningham Construction Co., Shreveport, La.
Richmond Structural Steel Co., Richmond, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Bridge and Structural Iron Paints.

Chattanooga Paint Co., Chattanooga, Tenn.

Bridge Builders. (Timber.)

Murray & Co., Inc., W. D., Norfolk, Va.

Brimstones.

Union Sulphur Co., New York, N. Y.

Buckets. (Clam Shell.)

Hayward Company, New York, N. Y.

Williams Co., G. H., Erie, Pa.

Buckets. (Dredging, Excavating, Sewer, etc.)

Hayward Co., New York, N. Y.
Hood-Morison Mfg. Co., East Boston, Mass.
Monteban Mch. Co., Chicago, Ill.
Williams Co., The G. H., Erie, Pa.

Buckets. (Grab.)

Hunt Co., Inc., O. W., West New Brighton, N. Y.

Buckets. (Orange Peel.)

Hayward Co., The, New York, N. Y.

Buckets. (Ore Handling.)

Caldwell & Son Co., H. W., Chicago, Ill.

Hayward Co., New York, N. Y.

Link-Belt Co., Philadelphia, Pa.

Williams Co., The G. H., Erie, Pa.

Buhr Stones.

Starr Co., B. F., Baltimore, Md.

Builders and Contractors.

Interstate Const. Co., Louisville, Ky.

Stone & Webster Eng. Corp., Boston, Mass.

Turner, O. A. P., Minneapolis, Minn.

White Companies, J. G., New York, N. Y.

Building Stone

Atlantic Stone Co., Atlanta, Ga.

Bedford Steam Stone Works, Bedford, Ind.

Building Supplies.

Chicago House Wrecking Co., Chicago, Ill.

Southern Building Material Co., Norfolk, Va.

Burners. (Oil.) [See Fuel Oil Equipments.]

Bushings. (Graphite, Bronze and Wood.)

Graphite Lubricating Co., Bound Brook, N. J.

Bushings. (Oilless.)

Graphite Lubricating Co., Bound Brook, N. J.

Metalline Co., Long Island City, N. Y.

Cables.

Broderick & Bascom Rope Co., St. Louis, Mo.

Roebbling's Sons Co., John A., Trenton, N. J.

Cables and Wires. (Insulated.)

American Steel & Wire Co., Chicago, Ill.

Cableways. (Overhead Suspension.)

Amhurst Co. (Tramway Department, New York, N. Y.)

Broderick & Bascom Rope Co., St. Louis, Mo.

Flory Mfg. Co., S., Bangor, Pa.

Lidgerwood Mfg. Co., New York, N. Y.

Roebbling's Sons Co., John A., Trenton, N. J.

Can and Box Making Machinery. (Tin.)

Ame Machine Co., Max, Mt. Vernon, N. Y.

Bliss Co., E. W., Brooklyn, N. Y.

Canning Machinery and Supplies.

Robins & Co., A. K., Baltimore, Md.

Spring Canning Machinery Co., Chicago, Ill.

Carborundum Paper and Cloth.

Carborundum Co., Niagara Falls, N. Y.

Cars. (Dump, Industrial, Logging and Mine.)

Austin Mfg. Co., Chicago, Ill.

Chase Fdry. & Mfg. Co., Columbus, O.

Curd, Geo. B., Cincinnati, Ohio.

Electric Wheel Co., (Mfrs.), Quincy, Ill.

Georgia Car & Locomotive Co., Atlanta, Ga.

Hunt Co., G. W., Inc., West New Brighton, N. Y.

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio.

Oliver Mfg. Co., Wm. J., Knoxville, Tenn.

Western Wheelbarrow Co., Aurora, Ill.

Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]

Car Unloaders.

Bonney Supply Co., Rochester, N. Y.

Car Wheels, Axles and Trucks.

Carnegie Steel Co., Pittsburgh, Pa.

Oliver Mfg. Co., Wm. J., Knoxville, Tenn.

Cast Iron Pipe. [See Pipes.] [Cast Iron.]

Castings. (Aluminum.)

Aluminum Company of America, Pittsburgh, Pa.

Castings. (Brass and Bronze.)

McKenna Bros. Brass Co., Pittsburgh, Pa.

Triumph Electric Co., Cincinnati, O.

Castings. (Gray Iron.)

Columbian Iron Works, Chattanooga, Tenn.

Georgia Car & Locomotive Co., Atlanta, Ga.

Glanmorgan Pipe & Foundry Co., Lynchburg, Va.

Hull's Sons, D. F., Hagerstown, Md.

U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.

Vaik & Murdoch Iron Works, Charleston, S. C.

Contractors (Drainage).
Globe Dredging Co., Savannah, Ga.
Thompson & Moseley, Inc., Greensboro, N. C.

Contractors (Dredging).
Globe Dredging Co., Savannah, Ga.

Contractors (Hydro-Electric Developments).
Requarth Co., C. W., Charlotte, N. C.

Contractors (Reinforced Concrete).
Hayward & Ashby, Rocky Mount, N. C.
Requarth Co., C. W., Charlotte, N. C.

Contractors (Water Supply).
Ayes & Bowler Co., Houston, Tex.

Contractors' Machinery and Supplies. [See also Hoisting Machinery.]

American Clay Machinery Co., The, Bucyrus, Ohio.
Austin Mfg. Co., Chicago, Ill.
Barr Mach. Co., The John F., Ravenna, O.
Card, Geo. B., Cincinnati, O.
Flory Mfg. Co., S., Bangor, Pa.
Marine Metal & Supply Co., New York, N. Y.
Milburn Co., Alex. N., Baltimore, Md.
Moulton Mch. Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Sherwood, E. O., New York, N. Y.
Sawling Machinery Co., New York, N. Y.
Thaw & Williams, Cincinnati, Ohio.

Conveying and Elevating Machinery.

Amberson Co., (Tramway Department), New York, N. Y.
Bartlett & Snow Co., C. O., Cleveland, O.
Gilder & Son Co., H. W., Chicago, Ill.
Flory Mfg. Co., S., Bangor, Pa.
Gifford-Wood Co., Hudson, N. Y.
Guarantee Construction Co., New York, N. Y.
Hart Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Philadelphia, Pa.
Main Belting Co., Philadelphia, Pa.
Mathews Gravity Carrier Co., Ellwood City, Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Weller Mfg. Co., Chicago, Ill.

Cooperage Stock and Box Shook Machinery.

Geslich Co., Peter, Cleveland, O.
Cordage.
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Waterbury Co., New York, N. Y.

Core Drilling.

Ameling Prospecting Co., H. R., St. Louis, Mo.
Sprague & Henwood, Inc., Scranton, Pa.

Core-Mill Machinery.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Sarr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Cotton Oil and Products.

American Cotton Oil Co., New York, N. Y.

Cotton Yarns. (Commission Merchants.)

Paulson, Linkroom & Co., New York, N. Y.

Cotton-Gin Machinery.

Quar Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Murray Co., The, Atlanta, Ga.

Cotton-Mill Machinery.

Crompton & Knowles Loom Works, Worcester, Mass.
Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.
Saw-Lowell Shop, Boston, Mass.
Whitinsville Spinn'g Ring Co., Whitinsville, Mass.

Cotton-Mill Supplies.

American Supply Co., Providence, R. I.
Crompton & Knowles Loom Works, Worcester, Mass.
Whitinsville Spinn'g Ring Co., Whitinsville, Mass.

Cottonseed-Oil Machinery.

Beckey Iron & Brass Works, Dayton, O.
Burruss Engineering Co., Atlanta, Ga.
Gardwell Machine Co., Richmond, Va.
Garver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
French Oil Mill Machinery Co., Piqua, O.
Murray Co., The, Atlanta, Ga.
Patt Iron Works Co., Dayton, Ohio.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Couplings.

American Spiral Pipe Works, Chicago, Ill.
Golden's Foundry & Machine Co., Columbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

Couplings. (Car.)

Wimer Chain & Iron Co., Lebanon, Pa.

Coverings. (Pipe, Boiler, etc.)

John-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

Cranes. (Locomotive.)

Ohio Locomotive Crane Co., Bucyrus, O.

Cranes. (Traveling, Hand, Power, Hydraulic.)

One Crane & Engineering Co., Columbus, Ohio.
Speidel, J. G., Reading, Pa.

Crayons.

Georgia Talc Co., Asheville, N. C.
Lowell Crayon Co., Lowell, Mass.

Crosscutting Equipment.

Omey-Hedges Co., Chattanooga, Tenn.
Struthers-Wells Co., Warren, Pa.
Walsh & Weller Boiler Co., Chattanooga, Tenn.

Crosscutting Boilers.

American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.

Crossarms and Pins.

Western Electric Co., New York, N. Y.

Crossarms. (Crosscut.)

American Crosscut Wks., New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.

Crossings. [See Railroad Frogs and Switches.]

Crosscut Machine.

Standard Portable Saw Mill Co., New Orleans, La.

Crosscut. (Crosscut.)

American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.

Crosscut. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.

Crushed Stone. (Road Concrete and Ballast.)

American Ballast Co., Knoxville, Tenn.
Atlantic Stone Co., Atlanta, Ga.
Bald Mountain Quarry, Newson, N. C.
Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Weston Brook Quarry Co., Columbia, S. C.

Crushers. (Corn and Cob.)

Gründler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Crushers. (Rock.)

Austin Mfg. Co., Chicago, Ill.
Buchanan Co., Inc., C. G., New York, N. Y.
Chalmers & Williams, Chicago Heights, Ill.
Power & Mining Machinery Co., Oudash, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheeled Scraper Co., Aurora, Ill.

Crushing and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., C. O., Cleveland, O.
Buchanan Co., Inc., C. G., New York, N. Y.
Chalmers & Williams, Chicago Heights, Ill.
Gründler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
K-B Pulverizer Co., Inc., New York, N. Y.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Works, Aurora, Ind.
Western Wheeled Scraper Co., Aurora, Ill.

Culvert Pipe. (Cast Iron.)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Const. Co., Philadelphia, Pa.
Clow & Sons, James B., Chicago, Ill.
Donaldson Iron Co., Emaus, Pa.
Glanorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, Ohio.
U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Culverts. (Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armco Culvert Publicity Bureau, Cincinnati, O.
Atlas Metal Works, Dallas, Tex.
Canton Culvert and Silo Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Fouts Co., C. C., Middletown, O.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Lone Star Culvert Co., Houston, Tex.
National Corrugated Culvert Mfg. Co., Warren, Pa.
Newport Culvert Co., Inc., Newport, Ky.
Salemberg Metal Culvert Co., Salisbury, N. C.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Inc., Roanoke, Va.

Culverts. (Vitrified Pipe.)

Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.

Curb Protector. (Steel.)

Steel Protected Concrete Co., Philadelphia, Pa.

Cutter Grinders.

Vitrified Wheel Co., Westfield, Mass.

Cutting. (Oxy-Acetylene Process.)

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
The Searchlight Co., Chicago, Ill.

Cuts. (Half Tone, Line, Etc.)

Alpha Photo Engraving Co., Balto. Md.
Baltimore-Maryland Engraving Co., Baltimore, Md.

Derricks and Derrick Fittings.

Byers Mach. Co., The John F., Ravenna, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Designers and Illustrators. (Printed Matter.)

Alpha Photo Engraving Co., Baltimore, Md.
Baltimore-Maryland Engraving Co., Baltimore, Md.

Diamond Core Drilling.

Ameling Prospecting Co., H. R., St. Louis, Mo.
Sprague & Henwood, Inc., Scranton, Pa.

Disposal Plants. (Garbage Incinerators.)

Stacy-Bates Co., Minneapolis, Minn.

Ditching Machinery.

American Steel Dredge Co., Fort Wayne, Ind.
Bey City Dredge Works, Bay City, Mich.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
The Automatic Shovel Co., Lorain, Ohio.
Williams Co., The, G. H., Erie, Pa.

Doors. (Steel Rolling.)

Kinnear Mfg. Co., Columbus, O.
Van Harlingen, J. M., Atlanta, Ga.

Doors. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Double Seamers.

Ans Machine Co., Max, Mt. Vernon, N. Y.

Draftsman.

Childrey Co., Richmond, Va.

Draftsmen's Supplies.

Weber & Co., F., Philadelphia, Pa.

Dredging Contractors. [See Contractors (Dredging).]

Dredge Chains.

Wimer Chain & Iron Co., Lebanon, Pa.

Dredges. [See Excavating Machinery.]

Drills. (Pneumatic.) [See also Drills Rock and Mining.]

Drills. (Prospecting.)
Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Drills. (Rock and Mining.)

Jeffrey Mfg. Co., Columbus, O.

Sullivan Mch. Co., Chicago, Ill.

Drills. (Twist.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Drop Forgings.

American Spiral Pipe Works, Chicago, Ill.

Drop Forging Machinery.

Rites Co., E. W., Brooklyn, N. Y.

Erie Foundry Co., Erie, Pa.

Dryers. (Sand.) [See Sand Dryers.]

Dry Decks. (Builders of)

American Bridge Co., of New York, N. Y.

Drying Machinery.

American Process Co., New York, N. Y.
Bailey-Lobby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Casterville, Hotchkiss Works, Casterville, Pa.
Cummer & Son Co., F. D., The, Cleveland, Ohio.
Heresy Manufacturing Co., South Boston, Mass.
Ruggles-Coles Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Dry Kilns.

Buffalo Forge Co., Buffalo, N. Y.
Moore Dry Kiln Co., L., Jacksonville, Fla.

Dry Kiln Equipment.

Moore Dry Kiln Co., L., Jacksonville, Fla.

Dumbwaiters. (Hand Power.)

McKenna Bros. Brass Co., Pittsburgh, Pa.

Speidel, J. G., Reading, Pa.

Dump Wagons.

Acme Wagon Co., Emigsville, Pa.

Henderson Wagon Wks. Co., Henderson, Ky.

Western Wheeled Scraper Co., Aurora, Ill.

Dust-Collecting System.

Buffalo Forge Co., Buffalo, N. Y.

King Co., F. E., Norfolk, Va.

South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.

Dynamite. (Industrial and Agricultural.)

Du Pont Powder Co., Wilmington, Del.

Aetna Explosives Co., Inc., New York, N. Y.

Dynamos and Motors.

Assets Purchasing Co., Wheeling, W. Va.
General Electric Co., Schenectady, N. Y.
Pan Electric Mfg. Co., St. Louis, Mo.
Terry Steam Turbine Co., Hartford, Conn.
Triumph Electric Co., Cincinnati, O.
Western Electric Co., New York, N. Y.

Eaves. (Trough.)

Edwards Mfg. Co., Cincinnati, O.

Ejectors. (Sewage.)

Lunkenheimer Co., The, Cincinnati, O.

Pacific Flush Tank Co., New York, N. Y.

Electric Machinery. (Dynamos, Generators, Motors, etc.)

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Crompton Electric Co., High Point, N. C.
Cruicker-Wheeler Co., Amper, N. J.
Fairbanks-Morse & Co., Atlanta, Ga.
General Electric Co., Schenectady, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.
Pan Electric Mfg. Co., St. Louis, Mo.
Piedmont Electric Co., Asheville, N. C.
Scheiner Co., R., Philadelphia, Pa.
Schroeder Electric Co., Evansville, Ind.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Triumph Electric Co., Cincinnati, O.
Wilson Mch. Co., St. Louis, Mo.

Electrical Contractors, Instruments and Supplies.

Crompton Electric Co., High Point, N. C.
Cruicker-Wheeler Co., Amper, N. J.
Economy Fuse & Mfg. Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Levy-Morton Co., Columbus, Ga.
Piedmont Electric Co., Asheville, N. C.
Walker Electrical & Plumbing Co., Rome, Ga.

Electric Light Plants. (Portable.)

Schroeder Electric Co., Evansville, Ind.

Electro-Magnet. [See Magnet Electro.]

Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]

Elevators

ELECTRIC.

American Electric Machine & Elevator Co., St. Louis, Mo.
American Elevator & Machine Co., Louisville, Ky.
Current Elevator Co., James H., Cincinnati, Ohio.
Grote Mfg. Co., F., Evansville, Ind.
K. C. Elevator Mfg. Co., Kansas City, Mo.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, Ohio.
Otis Elevator Co., New York, N. Y.
Speidel, J. G., Reading, Pa.
Warsaw Elevator Co., Baltimore, Md.
Westbrook Elevator Co., Danville, Va.

HAND AND BELT POWER.

American Electric Machine & Elevator Co., St. Louis, Mo.
American Elevator & Machine Co., Louisville, Ky.
Current Elevator Co., James H., Cincinnati, Ohio.
K. C. Elevator Mfg. Co., Kansas City, Mo.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, Ohio.
Otis Elevator Co., New York, N. Y.
Speidel, J. G., Reading, Pa.
Westbrook Elevator Co., Danville, Va.

HYDRAULIC.

American Electric Machine & Elevator Co., St. Louis, Mo.
American Elevator & Machine Co., Louisville, Ky.
Current Elevator Co., James H., Cincinnati, Ohio.
K. C. Elevator Mfg. Co., Kansas City, Mo.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, Ohio.
Otis Elevator Co., New York, N. Y.
Speidel, J. G., Reading, Pa.
Westbrook Elevator Co., Danville, Va.

STEAM HYDRAULIC.

Ridgway & Son Co., The, Coatesville, Pa.

Elevators. (Automatic.)

Mathews Gravity Carrier Co., Ellwood City, Pa.

Elevators. (Coal and Ashes.)

Gifford-Wood Co., Hudson, N. Y.

Elevators. (Portable for Warehouses, etc.)

Economy Engineering Co., Chicago, Ill.

Elevator Bolts.

Upson Nut Co., The, Cleveland, O.

Elevator Buckets.

Caldwell & Son Co., H. W., Chicago, Ill.

Gifford-Wood Co., Hudson, N. Y.

Hendrick Mfg. Co., Carbondale, Pa.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Philadelphia, Pa.

Elevator Enclosures and Cabs.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Dow Wire & Iron Works, Louisville, Ky.

Dufur & Co., Baltimore, Md.

Dufur, Ragot & Co., Baltimore, Md.

Jackson Iron & Bronze Works, Jackson, Tenn.

Meyers Mfg. Co., The, Erie, Pa.

Ohio Elevator & Machine Co., The, Columbus, O.

Otis Elevator Co., New York, N. Y.

Elevator Rope. [See Wire Rope.]

Elevator Safety Gates.

American Elec. Mch. & Elevator Co., St. Louis, Mo.

Richmond Safety Gate Co., Richmond, Ind.

Emery Wheels. [See Grinding Wheels.]

Engineers.

APPROVAL.

Atlantic Engineering Co., Savannah, Ga.
Day & Zimmerman, Philadelphia, Pa.
Meade, Richard K., Baltimore, Md.
Weller, Francis R., Washington, D. C.

BLAST FURNACES.

Smythe Co., The, S. R., Pittsburgh, Pa.

BRIDGES.

Atlantic Engineering Co., Savannah, Ga.
Greiner & Whitman, Baltimore, Md.
Grimmer & Toussaint, Tampa, Fla.
Martin Co., A. J., Portsmouth, Ohio.

CHEMICAL.

CLASSIFIED INDEX OF ADVERTISEMENTS.

Engineers.

LIGHTING

Ford, Bacon & Davis, New York, N. Y.
McCrory & Co., J. B., Atlanta, Ga.
Rucker, S. Parks, Charlotte, N. C.

MECHANICAL

Arnold Co., The, Chicago, Ill.
Graves Engineering Co., Inc., New York, N. Y.
Kelly, Thos. G., Cincinnati, Ohio.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
McLondie, A. S., Chattanooga, Tenn.
Moore, Richard W., Baltimore, Md.
Stevens, Harry, Washington, D. C.
Tucker & Laxon, Charlotte, N. C.

MINING

Brown & Clarkson, Washington, D. C.
Grimsley, G. P., Martinsburg, W. Va.
Hogue Engineering Ass'n, Charleston, W. Va.
Jones, E. M., Chattanooga, Tenn.
Renshaw & Breece, Huntington, W. Va.

MUNICIPAL

Anderson & Christie, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Crosby, Walter W., Baltimore, Md.
Dabney Engineering Co., Memphis, Tenn.
Elrod, Henry E., Dallas, Texas.
Graves Engineering Co., Inc., New York, N. Y.
Greiner & Whitman, Baltimore, Md.
Havely, H. B., Monroe, N. C.
Hayward & Ashby Rocky Mount, N. C.
Hogue Engineering Ass'n, Charleston, W. Va.
Knowles, Morris, Pittsburgh, Pa.
McCrory Bros. & Cheves, Inc., Charleston, S. C.
McCrory Co., J. B., Atlanta, Ga.
Moore & Thomas, Vicksburg, Miss.
Pew, Arthur, Atlanta, Ga.
Shand Engineering Co., Columbia, S. C.
Walker Engineering Corp., Tampa, Fla.
White, Gilbert O., Charlotte, N. C.

PAVING AND ROAD

Anderson & Christie, Charlotte, N. C.
Atlantic Engineering Co., Savannah, Ga.
Crosby, Walter W., Baltimore, Md.
Elrod, Henry E., Dallas, Texas.
Havely, H. B., Monroe, N. C.
Institute of Industrial Research, Washington, D. C.
McCrory Bros. & Cheves, Inc., Charleston, S. C.
Moore & Thomas, Vicksburg, Miss.
Shand Engineering Co., Columbia, S. C.
White, Gilbert O., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES

Day & Zimmerman, Philadelphia, Pa.
Ferree Co., The, H. G., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Gliman, Harry L., Boston, Mass.
Graves Engineering Co., Inc., New York, N. Y.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Engr. Corp., Boston, Mass.
Weller, Francis R., Washington, D. C.
White Companies, J. G., New York, N. Y.

REFRIGERATING

McCandlish Eng. Co., Robert M., Kansas City, Mo.

REINFORCED CONCRETE (Bridges, Buildings, etc.)

Cunningham Construction Co., Shreveport, La.
Elford, E., Columbus, O.
Foster & Creighton Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Hayward & Ashby, Rocky Mount, N. C.
Interstate Concrete Co., Louisville, Ky.
Luten, Daniel B., Indianapolis, Ind.
Martin Co., A. J., Portsmouth, Ohio.
McCrory Co., C. W., Charlotte, N. C.
Savannah Eng. & Construction Co., Savannah, Ga.
Spiker, William J., Atlanta, Ga.
Tucker & Laxon, Charlotte, N. C.
White Companies, J. G., New York, N. Y.

RIVER AND HARBOR

Gliman, Harry L., Boston, Mass.

SEWERAGE AND WATER-WORKS

Anderson & Christie, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Greiner & Whitman, Baltimore, Md.
Havely, H. B., Monroe, N. C.
Hill, Nicholas S., Jr., and S. F. Ferguson, New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
Miller, Hiram, Boston, Mass.
Myers, E. W., Greensboro, N. C.
Pew, Arthur, Atlanta, Ga.
Quick, Alfred M., Baltimore, Md.
Stevens, Harry, Washington, D. C.
Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.
White Gilbert O., Charlotte, N. C.

STEEL WORK AND ROLLING MILLS

Smythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL

Foster & Creighton Co., Nashville, Tenn.
Shearer, O. E., Memphis, Tenn.
Spiker, Wm. B., Atlanta, Ga.
Renshaw & Breece, Huntington, W. Va.

Engines

COMPRESSED AIR

Stacy Engine Co., Grand Haven, Mich.

GAS AND GASOLINE

Allied Manufacturers Co., Milwaukee, Wis.
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Bryce-Macbeth Engine Co., Cleveland, O.
Cooper Co., C. & G., Mt. Vernon, Ohio.
De La Vergne Machine Co., New York, N. Y.
Mitsui, A., New York, N. Y.
Portsmouth Engine & Boiler Works, Jackson, Tenn.
Van Dusen, James, The, Columbus, O.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

OIL

Bolinders Co., New York, N. Y.
Chicago Pneumatic Tool Co., Chicago, Ill.
De La Vergne Machine Co., New York, N. Y.
Fairbanks-Morse & Co., Atlanta, Ga.
Malta, A., New York, N. Y.
Moore & Sons Corp., Samuel L., Elizabeth, N. J.
Power Mfg. Co., Lima, Ohio.
Snow Steam Pump Plant, The, New York, N. Y.

STEAM

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Ball Engine Co., Erie, Pa.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barker Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Cooper Co., C. & G., Mt. Vernon, Ohio.
Dake Engine Co., Grand Haven, Mich.
Griffith & Wedge Co., The, Zanesville, O.
Houston, Stanwood & Gamble Co., Cincinnati, O.
Lefel & Co., James, Springfield, Ohio.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Schofield Iron Works, Macon, Ga.
Sturtevant Co., H. F., Hyde Park, Boston, Mass.
Vulcan Mfg. Co., Milwaukee, Wis.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Envelopes.

Conng & Selden Co., Baltimore, Md.

Excavating Machinery

American Olay Machinery Co., The, Bucyrus, Ohio.
American Steel Dredge Co., Fort Wayne, Ind.
Bay City Dredge Works, Bay City, Mich.
Byers Mach. Co., The John F., Ravenna, O.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Morris Machine Works, Baldwinville, N. Y.
National Hoisting Engine Co., Harrison, N. J.
The Automatic Shovel Co., Lorain, Ohio.
Williams Co., The G. H., Erie, Pa.

Excavators (Trench)

Bay City Dredge Works, Bay City, Mich.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Excelsior Machinery

Kline, Lewis T., Alpena, Mich.

Exhaust Heads

American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)
Builders' Exchange, Baltimore, Md.

Expansion Joints

Badger & Sons Co., E. B., Boston, Mass.

Expansion Joints (Street and Road)

Philip Carey Co., The, Cincinnati, Ohio.

Expanded Metal. [See Lath.]

Explosives

Du Pont Powder Co., Wilmington, Del.

Aetna Explosives Co., Inc., New York, N. Y.

Export Agents. (South America.)

Lutz, Friedr. W., Richmond, Va.

Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

Fans. (Electric.)

General Electric Co., Schenectady, N. Y.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

Fastener Driving Machine. (Corrugated Joint.)

Saranac Machine Co., Benton Harbor, Mich.

Feed-Water Heaters and Purifiers

American Water Softener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Murray Iron Works Co., Burlington, Ia.
National Pipe Bending Co., New Haven, Conn.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
Stewart Heater Co., Buffalo, N. Y.

Feed-Water Heater and Purifier and Oil Separator Combined

Blake & Knowles Steam Pump Works, East Cambridge, Mass.

Felt. (Building, Sheathing.)

Barrett Mfg. Co., Philadelphia, Pa.

Fencing. (Corrugated, Galvanized, Concrete.)

Amer. Sheet & Tin Plate Co., Pittsburgh, Pa.

Fencing. (Woven Wire Field.)

American Steel & Wire Co., Chicago, Ill.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.

Fencing, Entrance Gates. (Iron, Steel, Wire.)

American Steel & Wire Co., Chicago, Ill.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Iron Fence Co., Cincinnati, Ohio.
Cyclone Fence Co., Waukegan, Ill.
Dow Wire & Iron Works, Louisville, Ky.
Dufer & Co., Baltimore, Md.
Eureka Supply Co., Chattanooga, Tenn.
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Machy.]

K-B Pulverizer Co., Inc., New York, N. Y.
Stedman's Foundry & Machine Works, Aurora, Ind.
Vaik & Murdoch Iron Works, Charleston, S. C.

Files

Barnett Co., G. & H., Philadelphia, Pa.

Nicholson File Co., Providence, R. I.

Filters. (Water for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
New York Con. Jewell Fil. Co., New York, N. Y.

Fire Clay. [See Brick, Fire.]

Fire Door Fixtures

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers

Badger & Sons Co., E. B., Boston, Mass.

Fire Escapes

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Eureka Supply Co., Chattanooga, Tenn.
Jackson Iron & Bronze Works, Jackson, Tenn.

Fire Hose

Eureka Fire Hose Mfg. Co., New York, N. Y.

Fire Piles. (Brick and Tile.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

Fireproof Building Construction. [See Concrete Construction.]

Fireproof Building Material

Bannon Pipe Co., P., Louisville, Ky.
John-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters

Kinsard Mfg. Co., Columbus, O.
Richmond Safety Gate Co., Richmond, Ind.
Victor Mfg. Co., Newburyport, Mass.
Wagner's Sons Co., J. F., Louisville, Ky.
Wilson Corp., J. G., New York, N. Y.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings. (Wire Rope.)

Waterbury Co., New York, N. Y.

Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
American Spiral Pipe Works, Chicago, Ill.
Dart Mfg. Co., E. M., Providence, R. I.
Glanorgan Pipe & Foundry Co., Lynchburg, Va.
U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.
Wood & Co., E. D., Philadelphia, Pa.

Flooring. (Composition.)

Petro-Pulp Floor Co., Kansas City, Mo.

Flooring. (Oreosated Block.)

Republic Oreosoting Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)

Whiting, William S., Elizabethton, Tenn.

Flour and Grist Mill Machinery and Supplies

Caldwell & Sons Co., H. W., Chicago, Ill.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Flue Lining

Owensboro Sewer Pipe Co., Owensboro, Ky.

Southern Sewer Pipe Co., Birmingham, Ala.

Forges

Buffalo Forge Co., Buffalo, N. Y.

Forgings

Weimer Chain & Iron Co., Lebanon, Pa.

Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

Foundry Equipment and Supplies

Hill-Brunner Fdry. Supply Co., Cincinnati, O.

Newport Sand Bank Co., Inc., Newport, Ky.

Foundry Facings. (Talc and Soapstone.)

Georgia Talc Co., Asheville, N. C.

Hill-Brunner Fdry. Supply Co., Cincinnati, O.

Foundry and Machine Shops

Glanorgan Pipe & Foundry Co., Lynchburg, Va.
Goldens Foundry & Machine Wks., Columbus, Ga.
Grainger & Co., Inc., Louisville, Ky.
Lombard Iron Works, Augusta, Ga.
Titus, E. K., Petersburg, Va.

Vaik & Murdoch Iron Works, Charleston, S. C.

Frogs. [See Railroad Frogs and Switches.]

Fuel Economizer

Green Fuel Economizer Co., Mattawan, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil

Gulf Refining Co., Pittsburg, Pa.

Texas Co., The, Houston, Tex.

U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

Furniture. (Metal.)

The Van Dorn Iron Works Co., Cleveland, Ohio.

Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings

John-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron

American Sheet & Tin Plate Co., Pittsburgh, Pa.
La Belle Iron Works, Staebenville, O.
McCalla Co., Harold, Philadelphia, Pa.
Whitaker-Gleason Co., Portsmouth Plant, Portsmouth, Ohio.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Youngstown Steel & Tube Co., Youngstown, O.

Galvanizing Machinery. (Sheet.)

Erie Foundry Co., Erie, Pa.

Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Steel Products Co., The, Savannah, Ga.

Garbage Disposal Plants

Stacy-Bates Co., Minneapolis, Minn.

Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. [See Engines, Gas.]

Gas Machines

Kemp Mfg. Co., O. M., Baltimore, Md.

Milburn Co., Alex. H., Baltimore, Md.

Gas Plants

Gas Engineering Co., Trenton, N. J.

Power & Mining Machinery Co., Gadsby, Wis.

Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers

Smythe Co., The S. R., Pittsburgh, Pa.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Gasoline and Kerosene

Gulf Refining Co., Pittsburg, Pa.

Texas Co., The, Houston, Tex.

Gas and Steam Fitters' Tools

Saunders' Sons, D., Yonkers, N. Y.

Gears

Caldwell & Sons Co., H. W., Chicago, Ill.

Oreson-Morris Co., Philadelphia, Pa.

James Mfg. Co., D. O., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Generating Sets

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Triumph Electric Co., Cincinnati, O.

Geologists

Davis, Geo. C., Phila., Pa.

Freembling & Robertson, Richmond, Va.

Grimsley, G. F., Martinsburg, W. Va.

Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies

Caldwell & Sons Co., H. W., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Link-Bell Co., Philadelphia, Pa.

Granite

Southern Marble & Granite Co., Spartanburg, S. C.

Gratings

Dixon Grating Co., Joseph, Jersey City, N. J.

Grates and Grate Bars

Huber Grate Bar & Stoking Co., Baltimore, Md.

Thomas Grate Bar Co., Birmingham, Ala.

Gravel

Arnold Sand & Gravel Co., Baltimore, Md.

Davidson Chemical Co., Baltimore, Md.

Gravel. (Roofing and Road)

American Ballast Co., Knoxville, Tenn.

Gravity Spiral Chutes

Mathews Gravity Carrier Co., Ellwood City, Pa.

Greases

Albany Lubricating Co., New York, N. Y.

Grease Cups

Albany Lubricating Co., New York, N. Y.

Lankensheimer Co., The, Cincinnati, O.

Greases and Lubricating Compounds

Albany Lubricating Co., New York, N. Y.

Gatens Signal Oil Co., Franklin, Pa.

Robinson & Son Co., Wm. C., Baltimore, Md.

Texas Co., The, Houston, Tex.

Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

Grinding Wheels

Carborundum Co., Niagara Falls, N. Y.

Vitrified Wheel Co., Westfield, Mass

RAILROADS

Atlanta & West Point R. R., Atlanta, Ga.
Central of Georgia R. R., Savannah, Ga.
Florida East Coast R. R., St. Augustine, Fla.
Illinois Central Railroad Co., Chicago, Ill.
Norfolk & Western Railway, Roanoke, Va.
Seaboard Air Line, Norfolk, Va.
Southern Railway System, Washington, D. C.

Industrial Track Work. [See Railways, Ind.]

Locomotives.

Jenkins Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
Lundie Machinery Co., Cincinnati, O.
Mead & Co., Inc., Wm., Philadelphia, Pa.

Insulating Materials.

General Electric Co., Schenectady, N. Y.
Johns-Manville Co., H. W., New York, N. Y.

Insurance.

Barford Steam Boiler Inspector & Insurance Co.,
Barford, Conn.

Investment Securities.

Leach & Co., A. B., New York, N. Y.
New First National Bank, Columbus, O.
Powell, Gerard & Co., Chicago, Ill.
Portland Savings Bank & Trust Co., Cincinnati, Ohio.

Iron.

Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Irrigation Machinery.

Cameron Steam Pump Wks., A. S. New York, N. Y.

Jest Hangers.

The Van Dorn Iron Works Co., Cleveland, Ohio

Kettles. (Steam Jacket.)

Bulger & Sons Co., E. P., Boston, Mass.

Lace Leather.

Grison & Knight Mfg. Co., Worcester, Mass.

Lamps. (Arc and Incandescent.)

Edison-Economy Lamp Division, National Lamp
Works of General Electric Co., Danvers, Mass.
General Electric Co., Schenectady, N. Y.
Piedmont Electric Co., Asheville, N. C.

Lamps. (Carbon and Tungsten.)

Swan Electric Lamp Co., Cincinnati, O.

Lamp Posts. (Electric, Gas.)

Western Gas Construction Co., Ft. Wayne, Ind.

Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]

Landscape Architects. (See Engineers.) [Landscape]

Lathes. (Eng. ne.)

Greaves, Kinsman Tool Co., The, Cincinnati, O.

Lawn Furniture. (Wire.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Iron Fence Co., Cincinnati, Ohio.
Defer & Co., Baltimore, Md.
Defer, Baggett & Co., Baltimore, Md.

Lights. (Portable Acetylene.)

Wilbur Co., Alex. N., Baltimore, Md.

Liquor Filters.

International Filter Co., Chicago, Ill.

Lithographers, Engravers.

Yong & Selden Co., Baltimore, Md.

Lockers (Steel)

Highley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

Locomotives.

Van Hurling, J. M., Atlanta, Ga.

INDUSTRIAL.

Baldwin Locomotive Wks., The, Philadelphia, Pa.
Olmax Mfg. Co., Corry, Pa.
Dard Geo. B., Cincinnati, O.
Davenport Locomotive Works, Davenport, Ia.
De Co., J. D., Plymouth, Ohio.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
Rockwell Iron & Equipment Co., Allen, Ga.
Thaw & Williams, Cincinnati, O.

RAILWAY.

Baldwin Locomotive Wks., The, Philadelphia, Pa.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.

Looms and Weaving Machinery.

Gumpston & Knowles Loom Works, Worcester, Mass.
Jasper Co., Hopkinton, Mass.
Mason Machine Works, Taunton, Mass.
Saco-Lowell Shops, Boston, Mass.

Loom Harness.

American Supply Co., Providence, R. I.

Lubricants.

Albany Lubricating Co., New York, N. Y.

Lubricants. (Graphite.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

Lumber.

Industrial Lumber Co., Elizabeth, La.

Lumber. (Crescote.)

American Crescote Works, New Orleans, La.
National Lumber & Creosoting Co., Texarkana, Ark.

Lumber. (Heavy Construction, Pitch Pine, etc.)

Industrial Lumber Co., Elizabeth, La.
National Lumber & Creosoting Co., Texarkana, Ark.

Lumber Buggies.

Wool Steam Feed Works - Meridian, Miss.

Lumber Stackers.

Wool Steam Feed Works, Meridian, Miss.

Machinery. (Special.)

Wise Co., E. W., Brooklyn, N. Y.
Ragge Mfg. Co., Cincinnati, Ohio.
Rice, Lewis T., Alpena, Mich.
Universal Machine Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)

Associated Purchasing Co., Wheeling, W. Va.
Birtwell, W. L., Phila., Pa.
Boston Iron & Metal Co., Baito., Md.
Central Transfer Co., Baltimore, Md.
Chicago House Wrecking Co., Chicago, Ill.
Cleveland Baiting & Machinery Co., Cleveland, O.
Detrick & Harvey Mch. Co., Baltimore, Md.
Duxon & Son, New York, N. Y.
Eagle Pine Supply Co., Inc., New York, N. Y.
Empire Mch. & Supply Corp., Norfolk, Va.
Lehman, Charles T., Birmingham, Ala.
Lodge & Shipley Mch. Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.
National Machy. & Wrecking Co., Cleveland, Ohio.
New River Co., Macedonia, W. Va.
New York Machinery Exchange, New York, N. Y.
Nussbaum & Co., V. M., Fort Wayne, Ind.
Pannmuller Engineering Co., Chicago, Ill.
Power Equipment Co., New York, N. Y.
Prentiss Tool & Supply Co., New York, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
Read Co., Howard W., Philadelphia, Pa.
Samuel, Frank, Philadelphia, Pa.
Severett's Sons, Inc., L. E., Philadelphia, Pa.
Tampa Machinery Exchange, Tampa, Fla.
Thaw & Williams, Cincinnati, O.
Toomey, Frank, Inc., Philadelphia, Pa.
Wilson Machy. Co., St. Louis, Mo.
Winterer, Herman L., Philadelphia, Pa.

Machine Tools.

Greaves, Kinsman Tool Co., The, Cincinnati, O.

Machinists. (Engineers.)

Universal Machine Co., Baltimore, Md.

Magnesia Materials.

Johns-Manville Co., H. W., New York, N. Y.

Magnetic Separators.

Buchanan & Co., Inc. O. G., New York, N. Y.

Mail Chutes.

Outlier Mail Chute Co., Rochester, N. Y.

Mechanical Draft.

Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Metal Ceilings. [See Ceilings, Metal.]

Metals.

Metaline Co., Long Island City, N. Y.

Metal. (For Tanks, Cylinders, Roofing, etc.)

Whitaker-Giesner Co., Portsmouth Plant, Portsmouth, Ohio.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Bliss Co., E. W., Brooklyn, N. Y.

Metal Shingles. [See Shingles.] (Metal.)

Alberger Pump & Condenser Co., New York, N. Y.

Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)

Whitaker-Giesner Co., Portsmouth Plant, Portsmouth, Ohio.

Metal Working Machinery. (Sheet.)

Bliss Co., E. W., Brooklyn, N. Y.

Meters. (Water.)

Alberger Pump & Condenser Co., New York, N. Y.

Meter Boxes, Couplings, Gauges. (Water.)

Clark Co., H. W., Mattoon, Ill.

Micrometers, Calipers, etc.

Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)

International Filter Co., Chicago, Ill.

Mill Engineers and Architects.

O'Brian, W. O., Memphis, Tenn.

Mill Machinery and Supplies.

Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Empire Mch. & Supply Corp., Norfolk, Va.
Gainesville Iron Works, Gainesville, Ga.
Lombard Iron Works, Augusta, Ga.
Lunkenheimer Co., The, Cincinnati, O.
Mecklenburg Iron Works, Charlotte, N. C.
Salem Foundry & Machine Wks., Salem, Va.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Mining Machinery. (Gold, Copper, Plate, etc.)

Bartlett & Snow Co., O. O., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
McLannan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Raymond Bros. Impact Faly. Co., Chicago, Ill.

Mixers. (Concrete.)

Milwaukee Concrete Mixer Co., Milwaukee, Wis.

Mixing Machinery.

Dunning, W. D., Syracuse, N. Y.

Mortar Colors.

Obhattanoga Paint Co., Obhattanoga, Tenn.

Motor Trucks. (Gasoline.)

White Co., The, Cleveland, O.

Motor Trucks. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Music Wire.

American Steel & Wire Co., Chicago, Ill.

Nails. (Out.)

La Belle Iron Works, Steubenville, O.

Nails and Spikes.

La Belle Iron Works, Steubenville, Ohio.
Republic Iron & Steel Co., Youngstown, O.
Youngstown Sheet & Tube Co., Youngstown, O.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Oil. (Crescote.)

Barrett Mfg. Co., Philadelphia, Pa.

Oils. (Lubricating, Etc.)

Albany Lubricating Co., New York, N. Y.

Oils. (Lubricating, Etc.)

Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. O., Baltimore, Md.
Texas Co., The, Houston, Tex.

Oil Cans.

Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]

Oil Separators.

Stewart Heater Co., Buffalo, N. Y.

Oil Well Machinery.

Keystone Steam Well Mach. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.

Ore Handling Machinery. [See Coal Handling Machinery.]

Ornamental Iron Works.

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Dow Wire & Iron Works, Louisville, Ky.
Jackson Iron & Bronze Works, Jackson, Tenn.
Union Elevator & Mach. Co., The, Columbus, O.
Schrieber & Sons Co., The, Cincinnati, O.
Sneed Architectural Iron Works, Louisville, Ky.
The Van Dorn Iron Works Co., Cleveland, Ohio

Oxygen.

International Oxygen Co., New York, N. Y.

Oxygen Generators.

International Oxygen Co., New York, N. Y.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.

International Oxygen Co., New York, N. Y.

Packing. (Asbestos, Metallic, Rubber, Leather, etc.)

Goodrich Co., B. F., Akron, O.
Goodyear Tire & Rubber Co., Akron, O.
Grison & Knight Mfg. Co., Worcester, Mass.
Jenkins Bros., New York, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
Power Specialty Co., New York, N. Y.

Paint. (Metal Surface.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

Paint. (Preservative.)

Reeves Co., The, New Orleans, La.

Paint. (Roofing, Building, etc.)

Cameron & Barkley Co., Charleston, S. C.
Obhattanoga Paint Co., Obhattanoga, Tenn.

Paper. (Roofing, Building, Sheeting, etc.)

Barrett Mfg. Co., Philadelphia, Pa.

Partitions. (Wooden Rolling.)

Van Hurling, J. M., Atlanta, Ga.

Patent Attorneys.

Brown, Eugene C., Washington, D. C.
Chandee & Chandee, Washington, D. C.
Coleman, Watson E., Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Hodges, Vernon E., Washington, D. C.
Jenner, Herbert, Washington, D. C.
Lacey, R. S. & A. B., Washington, D. C.
McLundie, A. A., Chattanooga, Tenn.
Mills, Mansell F., Washington, D. C.
Moore, Edw. Bruce, Washington, D. C.
Parker, O. L., Washington, D. C.
Woodworth John R., Washington, D. C.

Paving Filler.

Barrett Mfg. Co., Philadelphia, Pa.

Paving Blocks. (Crescote.)

International Creosoting & Construction Co., Galveston, Tex.

National Lumber & Creosoting Co., Texarkana, Ark.

Republic Creosoting Co., Indianapolis, Ind.
Southern Creosoting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.
Wyckoff Pipe & Creosoting Co., Inc., The, New York, N. Y.

Paving Blocks. (Granite.)

Southern Marble & Granite Co., The, Spartanburg, S. C.

Paving Brick.

Garlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingis Shale Brick Co., Birmingham, Ala.
Dunn Wire-Out-Lag Brick Co., Coonessat, Ohio
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.

Paving Plants. (Asphalt.)

Barber Asphalt Paving Co., Philadelphia, Pa.
Cummer & Son Co., F. D., Cleveland, Ohio
Equitable Asphalt Maintenance Co., Kansas City, Mo.

Perforated Metal.

Caldwell & Son, H. W., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendricks Mfg. Co., The, Carbondale, Pa.
Mundt Perforated Metal Co., New York, N. Y.
Manhattan & Sons, Charles, Jersey City, N. J.

Petroleum Refiners.

Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.

Phosphate Machinery.

American Process Co., New York, N. Y.
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
K-B Pulverizer Co., New York, N. Y.
Link-Belt Co., Philadelphia, Pa.
McLannan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Impact Faly. Co., Chicago, Ill.
Valk & Murdoch Iron Works, Charleston, S. C.

Pig Iron.

La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.

Pile Drivers.

Valcan Iron Works, Chicago, Ill.

Pile Driving and Wharf Building.

Murray & Co., Inc., W. D., Norfolk, Va.

Piling. (Crescote.)

American Crescote Works, New Orleans, La.
Intern'l Creosoting & Const. Co., Galveston, Tex.
Southern Creosoting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.

Pillow Blocks.

Golden's Foundry & Machine Co., Columbus, Ga.
Medart Patent Pulley Co., St. Louis, Mo.

Pipe.

Allegheny Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, Ohio.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Pipe. (Cast Iron.)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
Clow & Sons, James B., Chicago, Ill.
Donaldson Iron Co., Kansas, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, O.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Pipe. (Coil.)

Frick Co., The, Waynesboro, Pa.
National Pipe Bending Co., New Haven, Conn.
York Mfg. Co., York, Pa.

Pipe. (Corrugated Culvert.) [See Culverts (Corrugated Metal).]

Pipe. (Riveted.)

Keeler Co., E., Williamsport, Pa.

Pipe. (Second Hand.)

Eagle Pipe Supply Co., Inc., New York, N. Y.

Pipe. (Spiral Riveted.)

American Spiral Pipe Works, Chicago, Ill.

Pipe. (Spiral Steel.)

Standard Spiral Pipe Works, Chicago, Ill.

Pipe. (Sewer, Vitrified.) [See Sewer Pipe, Vitrified.]

Pipe. (Wood.)

Wyckoff & Son Co., A., Kimira, N. Y.

Pipe. (Wrought Iron.)

Youngstown Sheet & Tube Co., Youngstown, O.

Pipe Bends.

Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.

Pipe Covering. (Steam.)

Chesapeake Roofing & Pipe Covering Co., Inc.
Baltimore, Md.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
Wyckoff & Son Co., A., Kimira, N. Y.

Pipe Cutting and Threading Machinery.

Saunders' Sons, D., Yonkers, N. Y.

Pipe Fittings.

American Cast Iron Pipe Co., Birmingham, Ala.
Lunkenheimer Co., The, Cincinnati, O.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.

Pipe Unions and Joints.

Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburgh, Pa.

Pipe Wrenches and Cutters.

Saunders' Sons, D., Yonkers, N. Y.

Piping System. (Designed and Installed.)

Pittsburgh Valve, Foundry & Construction Co., Pittsburgh, Pa.

Pitch.

Barrett Mfg. Co., Philadelphia, Pa.

Plaster Machinery.

Bartlett & Snow Co., O. O., Cleveland, O.

Pulleys. (Wood Split)

Caldwell & Son Co., H. W., Chicago, Ill.
Medart Patent Pulley Co., St. Louis, Mo.
Reeves Pulley Co., Columbus, Ind.
Salem Foundry & Machine Wks., Salem, Va.

Pulleys, Shafting and Hangers.

Caldwell & Son Co., H. W., Chicago, Ill.
Oreson-Morris Co., Philadelphia, Pa.
Golden's Foundry & Mach. Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Link-Belt Co., Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Reeves Pulley Co., Columbus, Ind.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulverizers.

Austin Mfg. Co., Chicago, Ill.
Gruendler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
K-B Pulverizer Co., Inc., New York, N. Y.
McLanahan-Stone Mach. Co., Homestead, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Wks., Aurora, Ind.
Western Wheel Scraper Co., Aurora, Ill.

Pumping Machinery.

Affiliated Manufacturers Co., Milwaukee, Wis.
Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook, A. D., Lawrenceburg, Ind.
Deane Steam Pump Plant, Holyoke, Mass.
Erie Pump & Equipment Co., Erie, Pa.
Emerson Pump & Valve Co., Alexandria, Va.
Holland Machine Co., New York, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Platt Iron Works Co., Dayton, Ohio.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Air.)

Blakelee Mfg. Co., Du Quoin, Ill.

Pumps. (Air Lift.)

Sullivan Mchry. Co., Chicago, Ill.

Pumps. (Boiler Feed.)

Alberger Pump & Condenser Co., New York, N. Y.
Blakelee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Jeanesville Iron Works Plant, Hazleton, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.

Pumps. (Centrifugal.)

Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Erie Pump & Equipment Co., Erie, Pa.
Holland Machine Co., New York, N. Y.
Jeanesville Iron Works Plant, Hazleton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Pacific Flush Tank Co., New York, N. Y.
Platt Iron Works Co., Dayton, Ohio.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Deep Well.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook, A. D., Lawrenceburg, Ind.
Holland Machine Co., New York, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.

Pumps. (Dredging.)

Buffalo Steam Pump Works, Buffalo, N. Y.
Erie Pump & Equipment Co., Erie, Pa.
Holland Mch. Co., New York, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Wood & Co., R. D., Phila., Pa.

Pumps. (Hydraulic.)

Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Gardwell Machine Co., Richmond, Va.
Erie Pump & Equipment Co., Erie, Pa.
French Oil Mill Mchry. Co., The Piqua, O.
Holland Mch. Co., New York, N. Y.

Pumps. (Steam.)

Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Blakelee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Olayton Air Compressor Plant, Cambridge, Mass.
Cook, A. D., Lawrenceburg, Ind.
Deane Steam Pump Plant, Holyoke, Mass.
Emerson Pump & Valve Co., Alexandria, Va.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works Co., Burlington, Ia.
Snow Steam Pump Plant, The New York, N. Y.
Worthington, Henry R., Harrison, N. J.

Pumps. (Trench.)

Affiliated Manufacturers Co., Milwaukee, Wis.
C. H. & E. Mfg. Co., Inc., Milwaukee, Wis.

Pumps. (Carbine Driven.)

Stortevant Co., B. F., Hyde Park, Boston, Mass.

Pumps. (Vacuum.)

Cameron Steam Pump Wks., A. S., New York, N. Y.

Pumps. (Water-works.)

Holland Mch. Co., New York, N. Y.
Platt Iron Works Co., Dayton, Ohio.

Pump Leathers.

Graton & Knight Mfg. Co., Worcester, Mass.

Punching and Shearing Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**Railroad Equipment and Supplies. (New and Second-hand.)**

American Frog & Switch Co., Hamilton, O.
Bailey-Lobby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Cincinnati Frog & Switch Co., Cincinnati, O.
Cord, Geo. B., Cincinnati, O.
Fairbanks-Morse & Co., Atlanta, Ga.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Kilby Frog & Switch Co., St. Louis, Mo.
Read Co., Howard W., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Thaw & Williams, Cincinnati, O.
United States Rail Co., Cumberland, Md.
Weir Frog Co., Cincinnati, O.
West Virginia Rail Co., Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Wilson Mach. Co., St. Louis, Mo.
Zelicker Supply Co., Walter A., St. Louis, Mo.

Railroad Frogs & Switches.

American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Conley Frog & Switch Co., Memphis, Tenn.
Kilby Frog & Switch Co., Birmingham, Ala.
Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.

Rails. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.
Foster Co., L. B., Pittsburgh, Pa.
Franks, J. E., Atlanta, Ga.
Gulf States Steel Co., Birmingham, Ala.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Levis & Co., Henry, Philadelphia, Pa.
National Steel Rail Co., St. Louis, Mo.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., B'ham, Ala.
United States Rail Co., Cumberland, Md.
West Virginia Rail Co., Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.

Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**Railings and Grilles. (Brass.)**

Newman Mfg. Co., Cincinnati, O.

Railways. (Industrial.)

Chase Eddy & Mfg. Co., Columbus, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Link-Belt Co., Philadelphia, Pa.

Rams. (Hydraulic.) [See Hydraulic Ram.]**Reamers.**

Morse Twist Drill & Mch. Co., New Bedford, Mass.

Reeds.

American Supply Co., Providence, R. I.

Refrigerating Machinery and Apparatus.

Huettner & Cramer Co., The, Detroit, Mich.
Portsmouth Engine Co., Portsmouth, N. H.
Remington Machine Co., Wilmington, Del.
Viller Mfg. Co., Milwaukee, Wis.
Vogt Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.

Reinforcing Bars. [See Concrete Reinforcing Bars.]**River and Harbor Improvements. (Dredges, Dock, Wharves, etc.)**

Globe Dredging Co., Savannah, Ga.

Road Expansion Joints.

Philip Carey Co., The, Cincinnati, Ohio.

Road and Street Machinery.

Austin-Western Road Mchry. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Equitable Asphalt Maintenance Co., Kansas City, Mo.
Erie Machine Shops, Erie, Pa.
Gallon Iron Works & Mfg. Co., The, Galton, Ohio.
Holt Manufacturing Co., Inc., The, Peoria, Ill.
Kelly Springfield Road Roller Co., Springfield, O.
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio.
Kuebler-Coles Engineering Co., New York, N. Y.
The Automatic Road Roller Co., Lorain, Ohio.
Universal Road Mchry. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.

Road and Street Materials.

Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Bostwick Corp. of America, Cleveland, Ohio.
Smet-Solway Co., Solway, N. Y.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Road Binders

Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Phila., Pa.
Smet-Solway Co., Solway, N. Y.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Roller. (Steam.)

Austin-Western Road Mchry. Co., The, Chicago, Ill.
Barber Asphalt Paving Co., Illinois Works, Buffalo, N. Y.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mchry. Co., Kingston, N. Y.

Road Oil.

Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Road Preservatives.

Barrett Mfg. Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Smet-Solway Co., Solway, N. Y.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Road Scarifiers.

Buffalo Steam Roller Co., Buffalo, N. Y.
Gallon Iron Works & Mfg. Co., The, Galton, Ohio

Rock Crushers. [See Crushers, Rock.]

Rollers. (For Moving Houses, Machinery, Etc.)
Ogden, O. O., Baton Rouge, La.

Roller Covering Supplies.

American Supply Co., Providence, R. I.

Roofing. (Cement Tile.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

Roofing. (Ready Prepared: Felt, Tar, Asphalt, Asphalt.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Pittsburgh, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barker Co., Charleston, S. C.
Cheapeake Roofing & Pipe Covering Co., Inc., Baltimore, Md.
John-Manville Co., H. W., New York, N. Y.

Roofing. (Metal Shingles.) [See Shingles, Metal.]

Bristol Metal Mfg. Co., Bristol, Va.-Tenn.
Corright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.

Roofings. (Slate.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.
Standard Slate Corp., Esmond, Va.

Roofing and Siding. (Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Pittsburgh, Pa.
Cameron & Barker Co., Charleston, S. C.
Corright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.
Youngtown Sheet & Tube Co., Youngstown, O.

Rope. (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rope. (Wire.) [See Wire Rope.]

American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
Waterbury Co., New York, N. Y.
Youngtown Sheet & Tube Co., Youngstown, O.

Rope Drives.

Caldwell & Son, H. W., Chicago, Ill.
Oreson-Morris Co., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rubber Goods.

Eureka Fire Hose Mfg. Co., New York, N. Y.
Goodrich Co., B. F., Akron, O.
Goodyear Tire & Rubber Co., Akron, O.

Rules. (Steel.)

Larkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Saddles. (For Cotton Mchry.) [Oilless.]

Graphite Lubricating Co., Bound Brook, N. J.

Safes and Vaults.

York Safe & Lock Co., York, Pa.

Sand.

Arundel Sand & Gravel Co., Baltimore, Md.
Davison Chemical Co., Baltimore, Md.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Sand. (Foundry.)

Newport Sand Bank Co., Inc., Newport, Ky.

Sand Dryers.

American Process Co., New York, N. Y.
Ripley Foundry & Mach. Co., The, Ripley, Ohio.
Ruggles-Cole Engineering Co., New York, N. Y.

Sap Stain Preventive.

Oburch & Dwight Co., New York, N. Y.

Sash Chains.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Saws.

Gerlach Co., Peter, Cleveland, O.
Hutner Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

Saws. (Hack.)

Starrett Co., L. S., Athol, Mass.

Saw Rigs. (Portable)

C. H. & E. Mfg. Co., Inc., Milwaukee, Wis.

Sawmill Dogs.

Soule Steam Feed Works, Meridian, Miss.

Sawmills.

Gainesville Iron Works, Gainesville, Ga.

Sawmill Machinery.

Bailey-Lobby Co., Charleston, S. C.
Cameron & Barker Co., Charleston, S. C.
McKenzieburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Wks., Jackson, Tenn.

Saw Sharpeners.

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Saw Sharpeners and Files. (Cotton Gin.)

Carver Cotton Gin Co., East Bridgewater, Mass.

Scales.

Standard Scale & Supply Co., Pittsburgh, Pa.

Screens. (Fly, Window and Door.)

New Jersey Wire Cloth Co., Trenton, N. J.

Screens. (Mining, Stone, etc.)

Erdie Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.

McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
McLanahan-Stone Mach. Co., Jersey City, N. J.
New Jersey Wire Cloth Co., Trenton, N. J.

Screenings. (For Concrete and Road Construction.)

American Ballast Co., Knoxville, Tenn.

Screws. (Machine.)

Progressive Mfg. Co., Torrington, Conn.

Screws. (Safety Set.)

Allen Manufacturing Co., Inc., Hartford, Conn.

Screw Machine Products.

Progressive Mfg. Co., Torrington, Conn.

Separators. (Dust.)

Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Sewer Flushing Siphons.

Pacific Flush Tank Co., New York, N. Y.

Sewer Joint Compounds.

Pacific Flush Tank Co., New York, N. Y.

Sewer Pipe. (Vitrified.)

Bannon Pipe Co., P. Louisville, Ky.
Blackmer & Post Pipe Co., St. Louis, Mo.
Cannelton Sewer Pipe Co., Cannelton, Ind.
Owensboro Sewer Pipe Co., Owensboro, Ky.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Pipe Co., H. Macon, Ga.

Sewer Pipe and Drains. (Monolithic Concrete)

Requarth Co., O. W., Charlotte, N. C.

Sewage Pumping and Disposal Apparatus.

Pacific Flush Tank Co., New York, N. Y.

Shafting. (Cold Rolled Steel.)

American Steel & Wire Co., Chicago, Ill.

Shafting. (Polished Steel.)

Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Pardee Works, O. Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Union Drawn Steel Co., Beaver Falls, Pa.

Shafting. [See Pulleys, Shafting and Hangers.]**Sharpening Stones.**

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Shearing Machinery.

Erie Foundry Co., Erie, Pa.

Sheet. Brass and Copper.

McKenzie Bros. Brass Co., Pittsburgh, Pa.

Sheet Metal Work.

Atlas Metal Works, Dallas, Tex.
Dixie Culvert & Metal Co., Atlanta, Ga.
Fouts Co., C. C., Middletown, O.
Lone Star Culvert Co., Houston, Tex.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
Salsbury Metal Culvert Co., Salsbury, N. C.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.

Sheet Metal Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.
Eagle Mfg. Co., Cincinnati, Ohio.

Sheet Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Coal, Iron & R. R. Co., B'ham, Ala.
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngtown Sheet & Tube Co., Youngstown, O.

Shelving. [(Steel) Vault, Store, Etc.]

Van Harlingen, J. M., Atlanta, Ga.

Shingles. (Metal.)

Bristol Metal Mfg. Co., Bristol, Va.-Tenn.

Corright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.

Shutters. (Iron.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

Shutters. (Steel Rolling.)

Kinnear Mfg. Co., Columbus, O.

Shutters. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Silos. (Metal.)

Steel.
Carnegie Steel Co., Pittsburgh, Pa.
Dietrich Bros., Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Lackawanna Steel Co., Lackawanna, N. Y.
Pardee Works, Co., Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Upon Nut Co., The, Cleveland, O.
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., The, Youngstown, O.

Steel. (Tool.)
Bourne-Fuller Co., The, Cleveland, Ohio.
McKenna Irons, Brass Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel. (Vanadium.)
Carnegie Steel Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel Buildings. (Designers, Builders.)
Amer. Bridge Co., of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Case Crane & Engineering Co., Columbus, Ohio.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Richmond Structural Steel Co., Richmond, Va.
Schreiber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Turner, O. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
Orrible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Coatesville Boiler Works, Coatesville, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Memphis Steel Construction Co., Pittsburgh, Pa.
Phoenix Iron Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.

Steel Protector. (Concrete Curb, Steps, etc.)
[See Curb Protector Steel.]

Steel Sheet Piling.
Carnegie Steel Co., Pittsburgh, Pa.
Frank, J. E., Atlanta, Ga.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
Baltimore Office Supply Co., Baltimore, Md.
Dorman Co., J. E. W., Baltimore, Md.

Stirrups. (Building.)
Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
Baltimore Office Supply Co., Baltimore, Md.
Dorman Co., J. E. W., Baltimore, Md.

Stokers. (Hand.)
Reber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
Rabcock & Wilcox Co., New York, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Stone. (Building.)
Atlantic Stone Co., Atlanta, Ga.
Bedford Steam Stone Works, Bedford, Ind.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Stone. (Crushed.) [See Crushed Stone.]

Stone and Gravel Plants.
Weller Mfg. Co., Chicago, Ill.

Storage Batteries.
Ecc. Storage Battery Co., The, Philadelphia, Pa.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Strapping Leather.
Graton & Knight Mfg. Co., Worcester, Mass.

Structural Steel and Iron.
Allegheny Steel Co., Pittsburgh, Pa.
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bourne-Fuller Co., The, Cleveland, Ohio
Carnegie Steel Co., Pittsburgh, Pa.
Case Crane & Engineering Co., Columbus, Ohio.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Works, Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dietrich Bros., Baltimore, Md.
East St. Louis Bridge Co., East St. Louis, Ill.
Grainger & Co., Inc., Louisville, Ky.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Memphis Steel Construction Co., Pittsburgh, Pa.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Richmond Structural Steel Co., Richmond, Va.
Scales & Sons Co., Wm. B., Pittsburgh, Pa.
Schreiber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
The Van Dorn Iron Works Co., Cleveland, Ohio.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Stamp Pullers.
Zimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
Rabcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.

Surveying Instruments.
Waber & Co., F., Philadelphia, Pa.

Swinging Engines.
Duke Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
General Electric Co., Schenectady, N. Y.

Switches. [See Railroad Frogs and Switches.]

Switchstands.
Wair Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
Georgia Talc Co., Ashville, N. C.

Tanks. (Iron and Steel.)
American Bridge Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Coatesville Boiler Works, Coatesville, Pa.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dixie Culvert & Metal Co., Atlanta, Ga.
Hartley Boiler Works, Montgomery, Ala.
Hendricks Mfg. Co., Carbondale, Pa.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Memphis Steel Construction Co., Pittsburgh, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schaffeld Iron Works, Macon, Ga.
Southern Boiler & Tank Works, Memphis, Tenn.
Struthers-Wells Co., Warren, Pa.
Tennessee Metal Culvert Co., Nashville, Tenn.
Twin City Boiler Works, Bristol, Va.-Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palaika, Fla.

Tapes. (Measuring.)
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.

Telephone Service.
American Telephone & Telegraph Co.

Terra-Cotta. (Ornamental.)
Atlanta Terra-Cotta Co., Atlanta, Ga.
Pomona Terra-Cotta Co., Pomona, N. O.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.

Threshers.
Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
Economy Engineering Co., Chicago, Ill.

Tile (Drain)
Oconee Brick & Tile Co., Milledgeville, Ga.

Tile (Interior)
Amer. Enam. Brick & Tile Co. New York, N. Y.

Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.
Advertising copy not requiring proof must reach us one week in advance of publication day.
When proof is required, two weeks in advance.
Width of column, 2 1/4 inches; length, 13 inches.
Four columns to page.

TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain-rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Tile. (Mantel and Promenade.)
Hood Brick Co., B. Mifflin, Atlanta, Ga.

Tile (Structural)
Oconee Brick & Tile Co., Milledgeville, Ga.

Timbers. (Crosotied.)
American Crosotied Works, New Orleans, La.
Republic Crosotied Co., Indianapolis, Ind.

Tin and Terne Plates.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tobacco Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.
Grote Mfg. Co., E., Evansville, Ind.

Tools. (Machinists.)
Holland Mfg. Co., Erie, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Mechanical.)
Starrett Co., L. S., Athol, Mass.

Tools. Pneumatic.
Chicago Pneumatic Tool Co., Chicago, Ill.

Torches.
Wall Mfg. Supply Co., P., Allegheny, Pa.

Towers. (Electric Transmission.)
American Bridge Co. of New York, N. Y.
Scales & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
Caldwell & Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Memphis Steel Const. Co., Pittsburgh, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam & Industrial Railroads.)
Conley Frog & Switch Co., Memphis, Tenn.
Upon Nut Co., Cleveland, O.

Traction Engines.
Fairbanks-Morse & Co., Atlanta, Ga.
Holt Mfg. Co., Inc., The, Peoria, Ill.

Tramway. (Overhead.)
Amburnson Co. (Tramway Department), New York, N. Y.
Spindel, J. G., Reading, Pa.

Tramways. (Portable.)
Amburnson Co. (Tramway Department), New York, N. Y.

Tramway. (Wire Rope.)
Amburnson Co. (Tramway Department), New York, N. Y.

Transformers.
Cracker-Wheeler Co., Ampere, N. J.
Triumph Electric Co., Cincinnati, O.

Trench Excavator. [See Excavator (Trench).]

Trucks. (Dry Kiln.)
Moore Dry Kiln Co., L., Jacksonville, Fla.

Trucks. (Platform, Freight, Mill, Factory, etc.)
Chase Fdry. & Mfg. Co., Columbus, O.

Trucks. (Storage Battery Auto.)
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Trust Companies. [See Bankers and Brokers.]

Tubes. (Boiler.)
Allegheny Steel Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.

Tube Well Strainers.
Cook, A. D., Lawrenceburg, Ind.

Tubing.
La Belle Iron Works, Steubenville, O.
Youngstown Sheet & Tube Co., Youngstown, O.

Tubing. (Rubber.)
Goodrich Co., H. F., Akron, O.
Goodyear Tire & Rubber Co., Akron, O.

Turbines. (Hydraulic.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Davis Foundry & Machine Wks., Rome, Ga.
Laffel & Co., James, Springfield, O.
Salem Foundry & Machine Wks., Salem, Va.
Smith Co., S. Morgan, York, Pa.

Turbines. (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Terry Steam Turbine Co., Hartford, Conn.
Western Electric Co., New York, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Turn Buckles.
Broderick & Bascom Rope Co., St. Louis, Mo.

Turntables.
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

Twine.
Columbian Rope Co., Auburn, N. Y.

Unions.
Dart Mfg. Co., E. M., Providence, R. I.

Upholstering Material. (For Auto's & Furniture)
Du Pont Fabrikoid Co., Wilmington, Del.

Vacuum Cleaning Apparatus.
King Co., F. E., Norfolk, Va.
United Electric Co., The, Canton, O.

Valves.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Columbian Iron Works, Chattanooga, Tenn.
Erick Co., The, Waynesboro, Pa.
Glanorgan Pipe & Fdry Co., Lynchburg, Va.
Jenkins Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
Powell Co., Wm., Cincinnati, O.
Pittsburgh Valve Fdry. & Const. Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.

Valve Boxes.
Clark Co., H. W., Mattoon, Ill.

Varnish.
Berry Bros., Inc., Detroit, Mich.

Venerer Machines.
Titus, E. E., Petersburg, Va.

Venetian Blinds.
Wilson Corp., J. G., New York, N. Y.

Ventilating Apparatus. (Engineers' and Contractors.)
Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Vices.
Holland Mfg. Co., Erie, Pa.

Wagons. (Dump.)
Acme Wagon Co., Emigsville, Pa.
Henderson Wagon Wks. Co., Henderson, Ky.
Western Wheeled Scrapers Co., Aurora, Ill.

Wagon Underloaders.
Bonney Supply Co., Rochester, N. Y.

Wall Coping.
Southern Sewer Pipe Co., Birmingham, Ala.

Wall Plugs. (Galvanized.)
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Wall Ties.
The Van Dorn Iron Works Co., Cleveland, Ohio.

Washers. (Graphite and Bronze, Oilless.)
Graphite Lubricating Co., Bound Brook, N. J.

Washers. (Ore and Phosphate.)
Baley-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]

Water Filters. [See Filters, Water, etc.]

Waterproofing. (For Brick, Concrete, Granite, etc.)
Aqua-Bar Co., The, Philadelphia, Pa.
Parrott Mfg. Co., Philadelphia, Pa.
Johns-Manville Co., H. W., New York, N. Y.

Water-Softening Apparatus. (Purifying.)
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
N. Y. Cont. Jewell Filter Co., New York, N. Y.
Tucker & Linton, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic.)]

Water-Works Supplies and Appliances.
Allen-Scales Engineering Co., Inc., Nashville, Tenn.
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Constr. Co., Philadelphia, Pa.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Clark Co., H. W., Mattoon, Ill.
Clow & Sons, James B., Chicago, Ill.
Coldwell-Wilcox Co., Newburgh, N. Y.
Columbian Iron Works, Chattanooga, Tenn.
Donaldson Iron Co., Emmaus, Pa.
Glanorgan Pipe & Foundry Co., Lynchburg, Va.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.
Massillon Iron & Steel Co., Massillon, Ohio.
Pomona Terra-Cotta Co., Pomona, N. O.
Salem Fdry. & Machine Works, Salem, Va.
Standard Spiral Pipe Works, Chicago, Ill.
Stevens' Sons Co., H., Macon, Ga.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Welding. (Oxy-Acetylene Process.)
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
The Searchlight Co., Chicago, Ill.

Welding Plants. (Oxy-Acetylene.)
Milburn Co., Alex. N., Baltimore, Md.
The Searchlight Co., Chicago, Ill.

Welding Apparatus. (Oxy-Acetylene Process.)
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
The Searchlight Co., Chicago, Ill.

Well Contractors. (Oil, Artesian, etc.)
Cook, A. D., Lawrenceburg, Ind.
Hughes Specialty Well Drill Co., Charleston, S. O.
Stothoff Bros., Flemington, N. J.

Well Tools and Supplies.
Cook, A. D., Lawrenceburg, Ind.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.

Wheels and Axles.
Electric Wheel Co., (Mfrs.), Quincy, Ill.
Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Carts.
Sterling Wheelbarrow Co., Milwaukee, Wis.

Window Frames and Sash. (Fireproof.)
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The, Cincinnati, O.
Wagner's Sons Co., J. F., Louisville, Ky.

Window Guards. (Wire.) [See Wire Goods.]

Windmills.
Caldwell Co., Inc., W. E., Louisville, Ky.

Wire. (Barbed Wire, etc.)
American Steel & Wire Co., Chicago, Ill.
Cyclone Fence Co., Waukegan, Ill.
Roebeling's Sons Co., John A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire. (Galvanized and Annealed.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.

Wire. (Galvanized Telephone.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.

Wire. (Plain Steel, Hoop, etc.)
Gulf States Steel Co., Birmingham, Ala.

Wire Cloth. (Iron, Steel, Brass, etc.)
Coldwell & Sons Co., The, H. W., Chicago, Ill.
Eureka Supply Co., Chattanooga, Tenn.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
American Steel & Wire Co., Chicago, Ill.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope. [See Ropes (Wire).]

Wire Rope Clips.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.

Wood Distillations.
Struthers-Wells Co., Warren, Pa.

Wood Pipe. (For Water, etc.)
Wyckoff & Son Co., A., Elmira, N. Y.

Wood. (Preservative.)
Harrott Mfg. Co., Phila., Pa.
Reeves Co., The, New Orleans, La.

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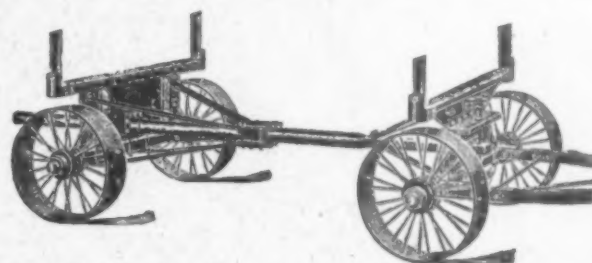
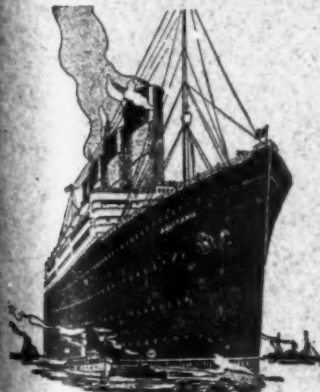
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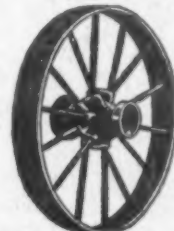
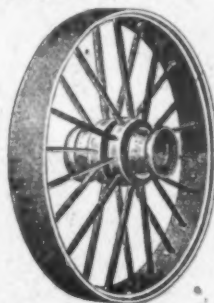
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